

INSTITUTE FOR
RESEARCH IN
SOCIAL SCIENCE

SOUTHERN TEXTILE BULLETIN

VOL. 41

CHARLOTTE, N. C., FEBRUARY 18, 1932

No. 25

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Finishing Ranges
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Ranges of Equipment
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Paper
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Scotch Dye Tubs
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Shrinking Machines
Silk Calenders
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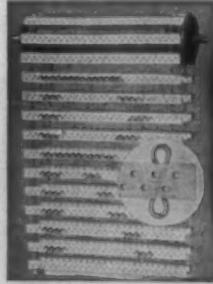
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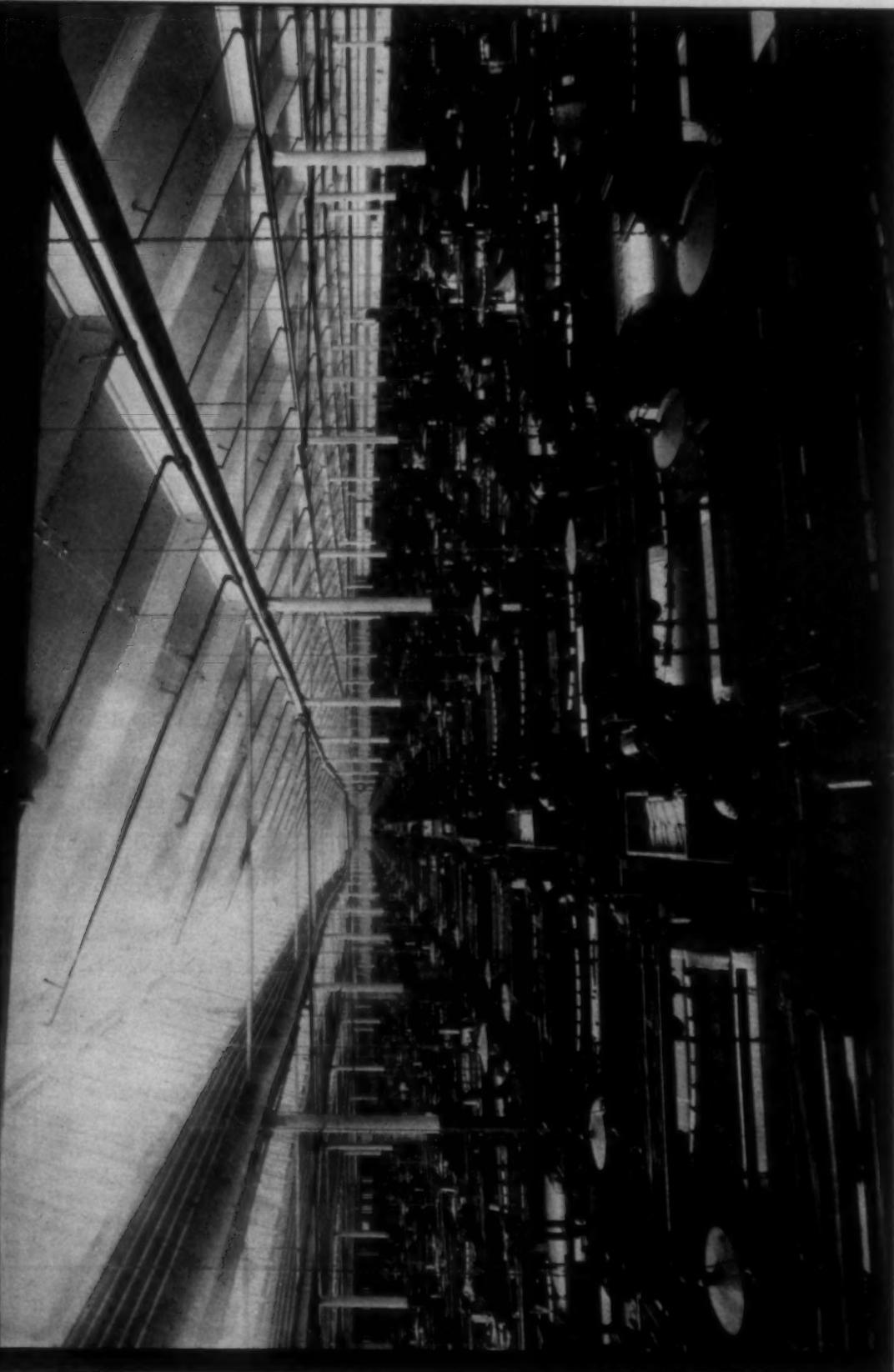
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No. 25

Co-Operation in the Cotton Textile Industry *

BY SYDNEY P. MUNROE

Assistant to the President, Cotton-Textile Institute

CO-OPERATION in the cotton textile industry is no new venture. It began in an organized way with the founding of the National Association of Cotton Manufacturers, then known as the New England Cotton Manufacturers Association, in 1854. In the Southern field it received further attention when the American Cotton Manufacturers Association was organized in 1897. In the intervening period numerous local associations were formed as, for instance, the Cotton Manufacturers Association of Georgia, the Cotton Manufacturers Association of South Carolina, the Cotton Manufacturers Association of North Carolina, the Arkwright Club in Boston, the Gaston County Manufacturers Association, the Southern Textile Association, the Fine Goods Cotton Exchange of New Bedford, the Association of Cotton Textile Merchants, and your own Fall River Manufacturers Association. All of these organizations have performed most valuable functions and have been real assets to the industry in their respective fields.

The cotton textile industry has several unusual characteristics. It consists of plants whose products vary most widely, ranging from the sheerest of lacy fabrics to the most durable forms of canvas and rope. The individual companies in this country comprise equipment ranging from 1,000 spindles to nearly 1,000,000 spindles. The entire industry today includes some 1,400 individual plants, about 850 separate companies, and has a total of approximately 32 million spindles in place, many of which, however, are not today active. Thus there is a tremendous variety of individual interests and opinions to be encountered in any co-operative venture of an industry-wide nature. If, however, all these plants were in one general locality these viewpoints might more easily be reconciled.

The fact is, however, that there is a very distinct geographical separation between two groups of the industry, one of which is located almost entirely north and east of New York City, the other, with few exceptions, being south of the Potomac river. Thus there is a physical line of separation and until steps were taken to bring the minds of manufacturers in both these sections to a better mutual consideration of their common problems there was

a very distinct cleavage of viewpoint between these two groups. All of this is historical but it has a bearing on some further points which I hope to bring out.

At the time of the World War a preponderance of cotton manufacturing was in the New England States but there was a rapidly growing young industry in the South. Nevertheless all mills were prosperous because the demand for cotton goods was keeping pace with the increased facilities for producing them. During the World War it became necessary greatly to increase the industry's output in order to meet the war-time demand for goods. As cotton mills could not be organized at short notice it was necessary for many plants to undertake night operation and even to operate 24 hours daily. Although this excessive operation was not new, it having already been practiced in some centers, it became during the war a well-nigh universal practice in that section.

With the close of the war and during the deflationary era which followed in the early twenties the demand for cotton goods subsided but mill operations in many centers continued on a double-shift basis, doubtless influenced to a great extent by the doctrine of mass production and its accompanying reduction in unit costs for fixed charges. There thus developed a situation where more goods were being produced than the markets could absorb with the result that a gradual elimination of machinery began which, up to the present time, has resulted in the disappearance of some six million spindles.

This elimination of equipment, however, did not assume serious proportions until well along in the past decade, and it has never given promise of balancing the excess of productive capacity which persists in the industry so long as a great majority of the mills are able to run at night and many of them are willing to do so. Consequently the market for cotton textile products has for at least ten years been in an unsettled state because of the intensity of competition between mills producing more goods than were wanted and hence in many cases forcing these excess-goods upon an unwilling market at whatever price they would bring.

These unsettled conditions have affected all mills alike, whether North or South, and whether strong or weak, because of the subnormal prices which this destructive competition has brought about, and it was because of

*Address before the Lions Club of Fall River, Mass.

this distress throughout the industry, which rendered no mill secure and no operative safe from unemployment, that prominent manufacturers North and South, after many joint discussions, organized the Cotton-Textile Institute to represent the industry at large regardless of geographical location. This took place late in 1926, thus the Institute has been functioning only about five years after allowing for the time required to put it in motion. It now numbers among its members the great majority of the spindles of the country and its affairs are guided by a board of directors which is comprised equally of Northern and Southern members. From its inception the management of the Institute has been impressed with the necessity of balancing the industry's production with the demand for its goods, and here is where co-operation has proven its effectiveness.

During these few years an organization has been established within the Institute for accumulating statistics which indicate at all times the production, sales, shipments, inventories and unfilled orders for the industry as a whole and for its major groups. Invaluable data thus developed is provided to the manufacturers and this enables them to shape their individual operating policies in an enlightened way with a reasonably complete knowledge of the basic market conditions. Such information supplements the very valuable statistical work of the Association of Cotton Textile Merchants.

A further profound weakness in the industry was discovered in the absence in the majority of the mills of any adequate procedure for determining costs. The Institute promptly attacked this problem and after consulting the most enlightened manufacturers, engineers and accountants enunciated certain cost finding principles which could be regarded as appropriate for the mills in general. Intensive educational effort has been directed along these lines with definite practical results. It is now probably true that more than 50 per cent of the industry has relatively accurate cost information and this attention to the subject is increasing at a rapid rate as indicated by the fact that during the twelve months prior to October, 1931, mills representing in excess of three million spindles adopted approved cost finding methods. The effect of an accurate knowledge of costs upon the soundness of merchandising policies can hardly be exaggerated and many merchandising evils should be corrected as the industry more nearly approaches a 100 per cent observance of proper cost methods.

Returning, however, to the problem of over-production or under-consumption, the cotton mills, with the help of the Institute, have been attacking these twin evils simultaneously. A large portion of our staff devotes its entire attention to the cultivation of an increased demand for cotton. This is being done successfully by developing new uses for cotton materials but more particularly by focussing the attention of the public upon the many well known uses of cotton and upon its inherent utility, cleanliness, durability and beauty. Among the new uses to which attention has been devoted are the use of cotton for aviation purposes, for road markers, for stationery, for posters, for all kinds of bags used in agricultural and industrial pursuits, for road construction work as a means of keeping the road surface in place, for wall and floor covering, and as an improvement on burlap for covering bales of cotton and cotton piece goods.

In promoting a renewed public appreciation of cotton in its well known forms a national advertising campaign was undertaken several years ago and this, together with other promotional activities, has resulted in hundreds of cotton exhibits, cotton carnivals and other publicity movements, the most prominent of which was the observ-

ance last year of National Cotton Week, which is, by the way, to be repeated next May. During National Cotton Week sales were greatly stimulated and it is understood that retailers alone spent more than \$1,500,000 advertising cotton fabrics. As a result of all this co-operative work we find that cotton garments now have front rank in women's styles as is evidenced by repeated reports from abroad, by the prominence given to such garments in the advertisements of retail stores in our papers, and by the fact that last week when Mr. and Mrs. Hoover held a reception for the Cabinet members and others the President's wife was arrayed in a cotton dress.

The effectiveness of such promotion of cottons is shown in the fact that, although many industries have been operating at anywhere from 30 to 60 per cent of their normal capacity, during the past year cotton consumption in this country was 87 per cent of the average for the preceding ten years. Moreover, during 1931, sales of cotton goods throughout the industry totalled about 4 per cent in excess of the combined production of all the mills and this, with other factors, resulted in the stocks of goods in the hands of the mills being reduced 20 per cent below the point at which they stood at the end of 1930. This must be regarded as a major achievement in view of the fact that inventories in many other important industries were increased during 1931 in spite of the low rate of operation of the industries in question.

This reduction of stocks and the excess of sales over production in 1931 brings us again to the problem of reducing over-production and would seem to indicate that through co-operative effort much has been accomplished along this line. In its attack upon this problem the Institute recommended two years ago that the mills give consideration to the policy of confining their operations to not more than 55 hours on the day shift and not more than 50 hours on the night shift if night work were practiced. The wisdom of this recommendation appealed to the industry generally with the result that more than three-fourths of all of the mills in the country have indicated their intention of abiding by it. Although this schedule may not seem particularly impressive to those who live in a 48-hour State, nevertheless the pursuit of this policy has tended greatly to reduce over-production because of the former prevalence in some sections of working schedules ranging from 110 to 144 hours weekly.

Later in 1930 a more significant recommendation was announced by the Institute's directors which invited consideration by the mills of a proposal that night employment of women and of minors under 18 years of age be abandoned. This proposal again appealed to the overwhelming majority of the mills with the result that well over 80 per cent of all the cotton mills in the country have voluntarily announced their pursuit of it. This, in effect, when any normal conditions obtain, is bound greatly to reduce the prevalence of night operation, although it is true that with unemployment so general some mills are finding it possible to secure sufficient men who are willing to do women's work at women's wages to enable them to operate after a fashion at night. In the long run it is believed that such night operation without women's labor will prove impracticable particularly because of the experience of your own mills here in Massachusetts which for years have been forbidden by law to employ women at night and which consequently have, in large part, abandoned all night operations. For those of you who are unfamiliar with textile operations it should be pointed out that there are certain duties in some departments of the mill which are almost necessarily performed by women and by women only.

In point of fact the effectiveness of this recommendation has been such that many mills who were confirmed night operators have entirely abandoned their night running and it is believed that this fact has contributed generously to the favorable statistical results for 1931 to which I have previously referred. Certainly this is a striking evidence of the value of industrial co-operation.

The relatively few opponents of such measures of co-operation base their attitude upon a belief in what, for lack of a better term, may be described as a theory of the survival of the fittest. It is unfortunate that this term or viewpoint, which may be quite appropriate in a biological sense should ever have been applied to an industrial situation and more particularly to the circumstances of the cotton textile industry. Even biologically it is a tedious process requiring in some cases millions of generations to become effective in any broad way. In the cotton textile industry it is a question whether any of us will live long enough to see the industry's ills corrected in such a ruthless and automatic manner.

Ordinarily when a cotton mill corporation becomes bankrupt it is only a question of time before some ill-advised individual, unfamiliar with the business and its troubles, purchases the plant for little or nothing and puts it again in operation thereby providing more destructive competition than before. I will grant, of course, that many mills have gone out of existence altogether and that this on its surface might seem to substantiate the survival of the fittest theory, particularly as some of the plants which have succumbed have been those which were mismanaged or which in spite of themselves were obliged to operate at high costs. Many of the plants which have disappeared, however, could have continued to operate for some time but their managements wisely decided to conserve their remaining surplus rather than dissipate it only to liquidate at a later time. Thus this shrinkage of 6,000,000 spindles is not wholly attributable to these mills being forced out of business.

However, if we were to assume that the entire industry, now comprising 32,000,000 spindles, were to operate day and night we would be obliged to junk all but about 14,000,000 spindles before production could be balanced with recent demand. If we were to assume that New England mills would run days only and that all Southern mills would run day and night we would still have to junk spindles until we had only 18,000,000. It seems to me that this is ample proof of the inadequacy of any proposal for allowing a hypothetical idea of the survival of the fittest to operate as it will.

Some individualists place their faith in their ability to operate at a low cost. This would appear to be a most insecure basis upon which to rest the future of an industrial enterprise and the manufacturer who believes that he can continue to operate at the lowest cost in the industry, or very near that level, must, to my mind, be an exceedingly egotistical individual. It seems obvious that any cost reduction policy which one mill may effect is equally available to many other mills. Certainly other mills will put such practices into effect if driven to it by their competitors. There is no manufacturer who has a patent upon wage reductions nor upon salary reductions. Neither is the opportunity to speed up production or to skimp on supplies or depreciation allowances available only to certain favored individuals.

It is an historical fact that wherever cost reductions have been effected buying interests have promptly become aware of them and all the economy thus effected has ordinarily been passed on in the form of reduced prices. In other words, the manager who confines his attention to reducing his costs by one means or another

usually finds that he has merely taken money from his employees or from those who provide him with service and has then distributed it to others. How much better and more constructive it is to operate an industry on a co-operative, live-and-let-live basis, enabling stockholders, employees, customers and those who provide the industry's materials an equal opportunity to share in the prosperity which should accrue to the business. Co-operation will prove the best and the quickest solution of this industry's problem.

Textile Bills in S. C. Are Tabled

Columbia, S. C.—Action has been delayed for one week on the two South Carolina House of Representative bills to regulate the textile industries.

A majority unfavorable report on Representative Godfrey's bill to abolish the so-called "stretch-out system" was tabled, and Representative L. H. Hick's bill to further regulate the textile employee's hours was likewise tabled.

It is said the action of tabling the reports was more of a parliamentary procedure than an indication of the Senate's attitude on them. Debate was carried over so that Senators might offer amendments to the two bills. Had the unfavorable reports been adopted, which is usually done, the bills would have been killed. Debate last week was on only Mr. Hick's bill to regulate the hours of labor in textile plants. Senator Gray of Spartanburg, S. C., led the fight for the passage of the bills. Senator Bryson of Greenville, S. C., joined him.

The attack against them was made principally by Senator Hamrick of Gaffney, a prominent textile executive. Senator Hamrick said that the bill would not decrease the number of hours a week a textile employee has to work. His chief objection to it were that textile executives resented "eternal regulation," and that it would work a hardship on many employees. The bill, for instance, provides that the employee shall go to work at 7 o'clock in the morning. Senator Hamrick said that during the summer, employees would rather go to work an hour earlier and quit an hour sooner so as to have more time in the late afternoons.

"The bill," he said, "attempts to say when we have to start to work and when we have to quit. The law already limits the employees' hours to 55 per week." He said that the mill owners wanted to be left alone during "this critical time."

Industry, he declared, was having just as hard a time now as the farmers. Senator Gray of Spartanburg said that seven cotton mill executives in his county had told him last week that they had no objection to the bill to regulate the hours of workmen. He said that everyone had a voice in the General Assembly but textile laborers. Senator Bryson asked that action on the bills be delayed until more study could be given them. "We have already found that it is necessary to regulate industry," he said.

Reception Frock of Cotton Worn By Mrs. Hoover

Washington.—In a cotton frock, modeled after the fashions of the seventies, Mrs. Hoover stood beside the President in the next-to-last reception of the official White House season.

It was a white dimity, printed with a blue figure, copied from a dress her mother wore. The quaint costume had a fitted bodice, with a V-cut neck, flowing skirt with ruffles, and black velvet scallops.

Research in the Textile Industry *

BY EDMUND S. BLAKE

Saco-Lowell Shops

HERE has been much said of late about the advisability and opportunity for any industry in research and in new developments. A very few years ago it was occasionally intimated that the textile industry was backward in this respect, and that it had consequently found itself in the doldrums because of a lack of such work and of forward-looking leaders. Other industries, most notably the automobile industry, have been held as shining examples of the advance in art, and odious comparison has been made of our industry. I am certain no one will deny the automobile industry all credit due it. It has been a life-saver for the nation. What that industry has accomplished in just forty years need not be detailed now, for you all are very familiar with it; but I wish to mention that the whole development possible was awaiting the automobile in 1890. The fact that it has been possible to utilize such enormous quantities of metals and other materials and equipment in that industry has both provided the opportunity and forced the developments in metallurgy, in chemistry, and in machine tools and methods.

During this time, and while this development has been in progress, what has our industry been doing? I appreciate there is an opportunity here for a much broader treatment than possible now to give a complete and adequate answer, but at least some allusions to outstanding features may be made, for some very important work is going on. Let us observe here that our industry is a very old industry, and that new developments other than improvement in details must be in a rather fundamental way.

RESEARCH IN COTTON

In the first place, how many are familiar with the very fundamental research work in cotton being carried on by the U. S. Department of Agriculture. This work is of such nature as to be unlikely or impractical of attainment by other than a government agency. Their work at first thought would appear more immediately in touch with the cotton grower and the ginner, but many facts and knowledge of the cotton fibre immediately concern the spinner as well as the grower. I happen to have been thrown in contact with some of that work, and I would like to remark that it has appeared to me that a broader recognition on the part of the constituents of our government might result in a more rapid application of the program and its fruition. It necessarily takes more than one summer to develop and grow a tree from a sprout, and have it bear fruit in large quantities, but if one has confidence, and the means to do it, it may be very desirable to start several trees or sprouts rather than to wait for the fruition of just one as a justification of the program.

How many here know that the strength of some cotton fibres is equal to piano wire of the same diameter? How many know that some cotton seed grows almost no linters; that some grow fibres of a much larger proportion very close to the average length; that the exceptionally long fibres have a different nature and strength from the others grown from the same seed; that dirty cotton is frequently stronger than cleaner cotton, and why?

*Paper read before meeting of Overseers of Spinning at National Textile Forum conducted under auspices of National Association of Cotton Manufacturers, Boston, Mass.

I have picked a few random queries which may or may not be fortunate ones to cite, but I feel it would be very helpful to the spinners to be in as close touch with this research program and their interesting findings.

TEXTILE FOUNDATION

Another very big research development is that of the Textile Foundation. The Textile Foundation was established by an Act of Congress in 1930 to take over and administer for scientific and economic textile research a fund of approximately \$1,300,000 accumulated by the Textile Alliance, which, under government authorization, distributed in this country German reparations dyestuffs following the World War. In addition to the \$1,300,000 thus accumulated, there was an additional sum of about \$600,000 representing Textile Alliance profits on definite transactions that were underwritten by certain groups of textile men, and a Philadelphia group definitely specified that any profits should be given to the Philadelphia Textile School for research work, and that institution has received about \$300,000 as a result. About \$250,000 has gone to Princeton University, and some \$50,000 to Massachusetts Institute of Technology.

The Philadelphia Textile School has not completed its plans for the use to which its research fund is to be put, but it is understood that they have in mind a research laboratory and the accumulation of an additional endowment fund from private sources. No statement has been issued by Princeton University as to the textile research to be conducted there, but the M. I. T. already has several textile researches in progress, including a study of the fatigue resistance of textiles and the development of an autographic crimp tester. In connection with their research on relative suitabilities of the present methods for testing yarns, as a co-operating laboratory of U. S. Institute for Textile Research, Inc., they have developed a torsion balance yarn numbering scale that corrects for moisture and that was described at the recent annual meeting of U. S. Institute.

The Textile Foundation is to finance as one of its major activities textile research fellowship at various colleges and textile schools. It is understood that these will number about 50 annually at approximately \$2,000 each. The purpose of this work is the training of scientists in textile research methods who may be available to manufacturers, institutions and commercial laboratories engaged in such work.

For the first time, therefore, in the history of the oldest factory industry in this country, there has been made available to it a substantial sum of money for promoting and financing scientific research independent of control by individual firms, which latter research is usually applied or developmental in character. It is assumed that the major part of the research to be financed by funds resulting from Textile Alliance profits will be of fundamental character. The textile research survey made by U. S. Institute for the Textile Foundation emphasizes the fact that fundamental research is the textile industry's greatest need.

You perhaps are familiar with the Textile Institute of England, which is a large association financed by a large number of the British mills. Under their guidance, a

great deal of fundamental research has been done in cotton, wool, rayon, and dyeing process. They publish monthly a magazine giving excerpts and complete reports of many of these research projects, together with a review of a good deal of the textile trade papers and books published. There is also a connection between this association, I believe, and the Shirley Institute, which is an organization provided with buildings, equipment and manned by a staff of scientists, physicists, chemists, and operatives who are doing some very thorough work in textile research and experimenting.

A few years ago a club was formed consisting of such American members of the British Textile Institute as were interested to join. Some discussions were held, some papers read, usually in regard to research in general rather than concrete topics. The need and the opportunity for development of such an association in the country was felt, and the outgrowth of this club has been the United States Institute of Textile Research, Inc. The late Dr. S. W. Stratton, whom you all know, formerly the head of the Bureau of Standards, and afterwards the president of the Massachusetts Institute of Technology, later chairman of the corporation, was the first president of this U. S. Institute of Textile Research. This longer name has been shortened into "Textile Research Institute" for every-day parlance, referred to as the "T. R. I." I certainly trust that T. R. I. will result in success. This Institute has established connections with a large number of the mills, and it is to be hoped by those who believe in its work, that our industry will foster and help in the development and fruition of the Institute. The beginning of the work embraces the establishment of a complete textile library in some one center. Secondly, to gather and to index current bibliography ready to promote research under various subjects which may be brought to the association, the work to be carried on by the educational institutions having textile laboratories and other sources of effort.

The address of the president of this Institute of Textile Research at the annual meeting, last month, referred to the program of research in various industries, and cited what was going on in the petroleum industry, steel industry, paper industry, textile industry and others. May I add just a paragraph under the heading "The Steel Industry," which I am quoting from this annual address:

"Take another field: Five years ago there was no real appreciation of research in the steel industry. But on October 16, this year, 1931, there was held in Pittsburgh an open meeting of the advisory committee on research, attended by 410 of the leading men in the field, who had journeyed to Pittsburgh, for just one day, to listen to reports of progress in research done by the Bureau of Mines, the Carnegie Institute of Technology and 44 steel companies. Five years ago it would have been impossible to get a dozen men there."

One more item in regard to this particular association: The T. R. I. made a survey in behalf of this "Textile Foundation." This is not complete, nor has been released for publication, but a portion of the same is contained in the annual report. I am quoting also from this:

TEXTILE RESEARCH GROWING

"The survey compares very favorably in percentage of replies, and to the credit of the textile industry in the number of concerns engaged in research, with a somewhat similar survey of 5,000 concerns in 40 different industries that was conducted in 1928 by the Division of Engineering and Industrial Research of the National

Research Council. This is fairly comparative only with the industrial group of this textile survey, as follows:

	Mailed	Replies	Reported
Textile Survey Industrial Group	1,124	488 (43%)	159 (14%)
Nat. Rsch. Council, 40 Industries	5,000	599 (12%)	353 (7%)

"These statistics show that in units engaged in research the textile industry compares favorably with other leading industries, but in total annual expenditures for research it is still among the backward industries."

MILL LABORATORIES

For years there has been a very intensive program for textile research along certain lines, at the Institute of Technology. I wish to avoid making any comparison amongst the textile schools, but to say that, in general, more or less work has been carried on in a very creditable nature in these other textile schools and colleges.

It appears then that there is a very live interest in our industry, as well as in industry in general in the subject of research, results of experimenting for new conceptions, and new developments. Many mills have established first-class laboratories for testing cotton in various stages, and usually these laboratories are manned or staffed by persons competent to study the process and to apply the findings of the laboratory, and very often to determine the cause of the difficulties and the opportunity for improvement in the work. I feel confident that if this work is worth while, and there is a large increase in the number of minds who appear to have come to that conclusion, that more co-operative efforts will develop. With a large number of competent, able men driving in the same general direction, advance is bound to come. I would like to offer one or two suggestions in this connection, but before proceeding with that, I feel that we should give something in the way of an account of our stewardship along this line. I realize there is another side to the picture. You men are usually employed quite strenuously with the problems of the day, and the industry has certainly presented many problems the last few years, but so far as the development of the equipment in the mill is concerned, that is largely the function of the machinery concerns. What have we been doing in this way? I wish to say here that I recognize this is not the time and place to attempt to sell you Saco-Lowell machinery. I wish to think in terms of the industry rather than of our company. Naturally, I am more familiar with the detailed activities of my own company than that of our competitors, but I have frequently had it happen that some suggestion or idea has been brought to us, or perhaps arisen from within, and then have found somebody else was working on the same proposition without either previously knowing of the other. It is an indication that the "march of progress" is going on, and things arrive when the industry, or the world if you please, is ready for them.

RESEARCH BY MACHINERY BUILDER

It is my belief that the American Textile Machinery Manufacturers have been forward looking and have pioneered in mechanical developments; new processes; in the use of new materials; and even revolutionary improvements. I might, while here, call your attention to some few figures which have a bearing on the problem. The period of 1880 to 1920 in this country was one of rather steady growth, on the average, in the number of mills and spindles, North and South. It is a significant fact that, as a rule, during all of that period there was a very small number of idle spindles reported by the government census. Naturally, with several million spindles installed there would always be at least a small percentage in difficulty, from one cause or another, but

there seemed to be a healthy demand for more mills as evidenced from the fact that during all this period, notwithstanding that increase of mills, there was no increase in the percentage of idle spindles until after 1920 or 1923. During that time, the machinery people were called upon to improve their product, but not to revolutionize the process. The opportunity and the demand since then has been for changes of a more fundamental nature. The changes that have taken place embraced the processes and designs of machinery, and to a very considerable extent structural materials used. You are more or less familiar with the changes in design and process, but I would like to allude briefly to some of the structural changes. The development of steel manufacture, heat treating, and of changes in design which permit the use of steel, modified and improved, are practical. The structural materials which were available during the first fifty years of that period were almost entirely limited to cast iron and wrought iron. Due to the later development of commercial steels, wrought iron was, by 1900, almost entirely replaced by a small number of carbon steels. The advent of the automobile during the first few years of the twentieth century made it necessary to produce steel having greater strength, and also a toughness far beyond that of existing steels, and steel manufacturers were compelled to perfect a considerable number of high-grade carbon and alloy steels. Who would buy a cast iron automobile, or make a railroad bridge of cast iron? Ordnance and other requirements during the World War led to still further developments in metals, and so at the beginning of the last decade industry had for the asking a large selection of desirable materials for machine construction. To take advantage of these advancements in materials it was necessary to go one step further and to subject them to processes of heat treatment in order to bring out their maximum possibilities. Where in the past it had been the exception to harden or heat treat a part of a machine, it now became advantageous to harden or heat treat all important parts in order to obtain greater strength and hardness, with corresponding toughness and long wear, resulting, in many cases, to lighter weight and better designed parts.

The manufacturers of high-grade textile machinery were not slow in adopting these new materials, and the leaders placed their metallurgical operations throughout the plant in charge of engineers trained in the selection of materials and their heat treatment. Well-equipped chemical and testing laboratories to check up on incoming materials were installed and heat treatment equipment was put in to properly prepared such materials and parts for the purpose they were to serve.

Cast iron will always occupy a major position in the list of materials used for the manufacture of textile machinery, because it is readily made into intricate castings and can be easily machined. The perfection of the art of electric welding and the development of machinery for working steel plate have, however, opened a new field to the machinery builder. By the use of steel, together with electric welding, structural parts of machinery can be built which are often-times not only of better design, but can be made of lighter weight than as if made of cast iron, as steel is stronger than cast iron, and under bending stress has two and one-half times the stiffness. The use of fabricated steel is finding increased favor.

CAST IRON AND STEEL

The statement just made that steel is two and one-half times as stiff as cast iron, I think may be a surprise

to some, for I find most people are under the impression that the opposite is true. If we were to place a cast iron bar here on two straight edges, say four feet apart, and beside it a steel bar of the same cross section, and we were to hang a weight in the middle of each, the two weights to be precisely the same amount, it would be found that the cast iron would bend just two and one-half times as much as the steel. The steel varies in tensile strength according to the character of the steel, but in all cases is from two, to considerably more than that, times as strong as cast iron. While the compressive strength of cast iron is greater than that of steel, the factor of safety required in the use of cast iron is much higher than that required in the use of steel, with the practical results that the steel has greater compressive strength than the cast iron. Steel, of course, is much less to fracture, and the stress put upon any part of the machine is more often one of tension than of compression. In either case, the compressive value of the metal is much higher than the tensile and, therefore, the designer more properly bears in mind the tensile requirements than the compressive.

To make some more specific, concrete applications to the parts of the machine in which you are interested—the machinery people can furnish you today with spinning spindles that are unquestionably far superior to the very best they were able to make only a few years ago. It is certainly true of us that the spindles which would not pass inspection today are usually better than the very best it was possible to turn out only a few years ago. Not only is this true as regards straightness, roundness and design, but the advent of new electric alloy spindle steel, and the processes for hardening and tempering explain further some of the improvements in spindles.

SPINNING ROLLS AND RINGS

Another important part of the frame, of course, is that of the steel roll. There has been improvement in the steel for making rolls, in the method of making, and in the design of the roll and method of finishing. The smoothness of the flute now attainable we were not able to accomplish a few years ago. Case hardening of the steel rolls, as already alluded to, has undergone a remarkable advance. A far more satisfactory roll than the best that we would offer a few years ago is commonplace today.

In regard to the rings, the same may be said. Rings were made of wrought iron until nearly 1890. The development of steels during the last 30 years has constantly improved the ring. The practice and methods of manufacture have also come along in the same development. The higher speeds demanded of the rings and the better performance of the spindles has urged or provided the opportunity for this development.

The material used in the gears varies according to the location and duty of the gears. It does not seem so many years ago since pig iron was tested and judged by the foundry foreman alone, from the fracture of the pig. The same pig may present a very different appearance according to the difference in the method of fracture, and at best the foundry foreman could not know as accurately what was required in the way of his mix as is commonplace now. We have metallurgical and chemical laboratories. We buy iron on specification, a very careful analysis is made of each carload of iron, and a very careful analysis made of the mixture melted from day to day. Iron of certain specifications is required for certain parts of our product, and iron of other

(Continued on Page 27)

Improvement in Spinning Machinery *

BY J. L. TRUSLOW

Whitin Machine Works

WE are trying very hard—all the machine shops are trying very hard—to improve the cotton spinning frame, and I thought that perhaps you gentlemen might be interested in hearing the various ways in which we secure our ideas, how those ideas reach us and what we do with them after we get them.

I think that fully 90 per cent of the good ideas in detail on spinning frames come from you gentlemen, the practical spinners in the mills. We frequently get constructive criticism that means a great deal to us in improving our product. Perhaps I can give you two examples of that.

A little while ago a spinner called to our attention the fact that when the gearing in the head end of the spinning frame was oiled a little bit too much, the oil would run out on the floor. Following that suggestion we have designed a new head end which has an oil reservoir, thus preventing the oil from running out. We owe that thought entirely to a practical man in the mill.

Then again another man pointed out that it was quite a nasty job to clean the bolster cases which project down through the side rail, so as a result of that man's suggestion, a practical man's idea, we have built a side rail which is completely boxed in so that cleaning it simply means running a broom down the side.

Constructive criticism is very valuable to us, but I think the destructive criticisms are even more valuable to the industry. If we ever venture to get out a part for a spinning frame which is a little harder to clean than necessary, or takes up a little more space than is necessary, something of that sort, our mail is very large until that thing is corrected. I won't give any examples of this destructive criticism because it is so painful I do not like to think of the instances, but you have helped us a lot along those lines.

Now the second source of inspiration we have in trying to improve the spinning frames comes from the research work which we do in our own laboratories and that which is done in institutional laboratories such as those of the Government, Massachusetts Institute of Technology and other institutions. This work is not so much concerned with detail and practical construction as it is with theory, and most of the radical steps ahead which have been made in the art of spinning seem to have derived from this sort of careful research work—and tried out in the mills later to demonstrate their value.

As an example of that, I think that the study which is now going on on the subject of the traveler may be of some interest to you. We all of us know, and Mr. Blake very ably explained to us this morning, that the limiting factor in the speed of the spinning frame is mainly the traveler. There are other factors, but they are not so important as the traveler. Now we know that you can run certain traveler speeds on certain kinds of work.

RULES FOR TRAVELER SPEED

In the past we have had various rules of thumb for helping us to determine what traveler speeds could be run. The rule which I first heard, I remember, was that a traveler should not run at a speed higher than a mile

*Paper read before meeting of Overseers of Spinning at National Textile Forum conducted under auspices of National Association of Cotton Manufacturers, Boston, Mass.

a minute. Well, in practice it quickly becomes evident that in most cases you cannot run a speed as great as this and in a few cases you can run a speed a little higher than this, so that that didn't really very much.

The next step was to segregate the yarns which are spun according to number and to assign safe traveler speeds for different ranges of yarn. We will say that a certain traveler speed would be assigned for yarns from 0 to 20's, and another traveler speed from 20's to 50's, and others from there up.

This was quite a step in advance, but if you were to plot those speeds in the form of a curve, you would see that you had a series of steps, and you make sudden transitions when you come to the limit of the yarns which are handled at different speeds. We have been trying to rationalize this subject a little bit, and have had a rather interesting time with it. The work is not over by a long shot.

In the first place, the traveler speed is not really what we are interested in. It is the wearing out of the traveler, and this wearing out of the traveler is due to the force with which the traveler bears against the inside of the ring, the centrifugal force. In approaching it from the mathematical point of view, we had some reason to hope that one of the factors involved in centrifugal force would more or less cancel out, and that is the weight of the traveler. It tends to cancel out as against the number of the yarn, so that it looked a little hopeful that we might be able to evolve a rule and say that the centrifugal acceleration of the traveler should be a constant.

Trying this out against yarn speeds which we know were running in mills and which were considered about as high as it was safe to go, we found that the centrifugal acceleration was not a constant, but it was somewhere near a constant. The next step was to introduce into the equation empirical factors to correct for the minor factors which influence the centrifugal acceleration. After a good deal of cutting and trying and comparison with actual operation in the mill, we derived a formula which gave us the spindle speed directly for any number of yarn and any size of ring, assuming that normal conditions existed. By that I mean that the frames had the proper gauge, and that the normal staple of cotton was being run, etc.

Of course, in any rule of this sort you have to make quite a few assumptions, and in applying the rule you merely use it as a satisfactory starting point. Having secured a formula which looked fairly good for common sizes of ring and common numbers of yarn, we thought it would be interesting to extend that formula a little bit to uncommon sizes of yarn and unusual ring diameters, and we found out what we might have expected, that there was a very interesting relation between the ring diameter and the size of the yarn in connection with the possible theoretical traveler speed.

If you are spinning, we will say 20's yarn, on a 2-inch ring, you can substitute into your formula and get a spindle speed that would be recognized as being reasonable. If you take the same 20's yarn and try to spin it on a 3-inch diameter ring, the spindle speed which you get from the theoretical formula is somewhat higher than you could expect, and after going through the thing

pretty carefully from the experimental point of view, we decided that this was a condition that was perfectly right and natural.

Perhaps the best way of making clear what I mean is to compare two automobiles, one running on a circular track, say about 200 yards in diameter, and the other running on a track a mile in diameter. Naturally on the track having a smaller diameter you are turning a sharper curve and experience would show you that you can run a higher speed on the larger track without burning out your tires than you could on the smaller track. Well, that is exactly what seems to be the case in connection with the travelers. I cite this research not as a finished thing, but in order to give you some idea of the type of work which is done in our laboratories and by our research staff.

FOREIGN DEVELOPMENTS

Now the third source of inspiration for improvement is the practice in other countries than our own and that is an extremely interesting field. When we speak of other countries than our own we usually mean England and the Continent of Europe, and this last year and the year before that I was sent over on trips to try to find out what was being done on the other side in the way of advanced practice, and to see whether their ideas could be adapted to our use in this country.

It is a very easy thing to get led into trouble in trying to use European ideas in this country because the conditions which the European mills confront are very different from those which prevail over here. I am frequently asked why it is that in Germany they are spinning in certain mills yarn as fine as 30s, we will say, direct from the drawing frame sliver. They ask why we are not on our jobs producing machines which will allow us to do the same thing in this country. Frequently the question of other devices used over there is brought up by progressive mill men who have read about them in textile papers.

I think the best example of how different their conditions are might be found in a mill which I visited in Spain, not very far from Barcelona. I went into this mill and walked through the spinning room with the overseer and felt quite at home. The overseer was wearing a straw hat just like an honest New England spinner. He felt the ends of yarn in just the same way and everything seemed very natural, except that there was a sense of crowding and I couldn't quite understand it until I noticed that the room was simply teeming with help. I asked the man how many sides a spinner would run and he said: "One girl runs one side." And that was the case.

Every side had a girl standing in front of it, and by her feet was one of those Spanish water bottles. She stood there and stared at that side all day long. If we were confronted with a situation like that, we would meet it in just the way the Spanish spinners have met it. They are prevented by labor regulations and by custom, which is still stronger over there, from spreading out their help, so that they have to lower their costs in a different way.

In the first place, they reduce the quality of their cotton to a degree which would be unbelievable over here. They run Indian and African cotton of staples ranging from $\frac{3}{8}$ of an inch up to $\frac{5}{8}$ of an inch; in yarn counts up as fine as 30s. They run spinning frames 600 spindles long. The idea of that is that if a girl is going to watch one side, it might as well be a long side.

Another thing that they do is to speed up as hard as they can. This man told me that he kept a very careful record of ends down in the spinning room. I said that this was interesting, and asked him what the record was.

He said: "If my ends down per hundred spindles per hour are not at least fifteen, I know that it is time for me to speed up some more, or to lower my cotton." It is awfully hard for an American to get used to what they are doing. The only reason I mention this is to show how different their problems are, and why it is they can do things that with our conditions we can't do.

For instance, take some of these devices that they use over there for spinning with super-draft. They seem to have a good deal of success, but they require a tremendous amount of cleaning. I think that in their present state of development they require a prohibitive amount of cleaning, but if a girl is going to stand there and watch one side, she might just as well be cleaning as doing anything else. So you see, it isn't possible to take systems from Europe and introduce them into this country without change.

Another example along the same lines, I think, is to be found in the long-draft spinning system with which I have been most closely connected, the Casablancas. It was originally brought here from Spain and applied without modification to American frames, and looking back over the history of that system I feel that its record in the early days was not a particularly enviable one. When we took it over we had to modify it considerably in order to adapt it to American conditions. Now, I am not going to speak about long draft this afternoon, because we have recently gotten out a book which covers the subject fairly thoroughly, and I have brought with me a number of these books.

Now, in regard to research there is one thing which I think ought to be brought out before I stop. In going around the mills I frequently hear a man say: "We would like to buy new spinning, but things are moving so fast nowadays that we are afraid to buy it, because in two or three years some radical change may come out which will make all our machines obsolete."

We try to make it our business to know what is going on in the world of ideas in regard to spinning, and I feel quite safe in saying that there is not under way at the present time anywhere in the world any idea with regard to spinning which is going to change it radically with regard to the principles involved. Great refinement is possible. Many an attachment can be devised which will improve the operation of the spinning frame and reduce the cost of spinning, but as for a frame suddenly appearing out of a clear sky which will make the present spinning frame obsolete and a liability to the mills, I just do not expect it to happen.

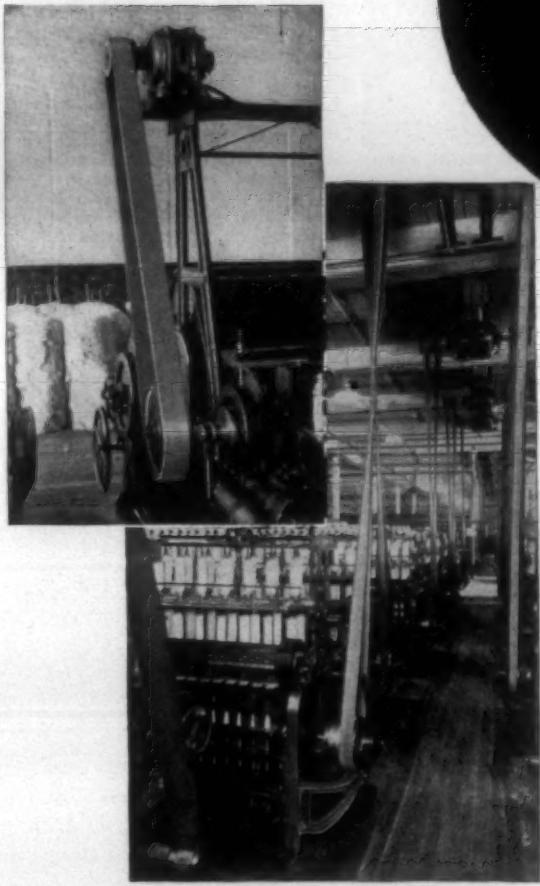
Japanese Cotton Man Denies Rumor

Dallas, Tex.—That Japanese purchases of American cotton are being made for the purpose of manufacturing munitions was vigorously denied this week by S. Tsukaguchi, president of the Japan Cotton Company, with headquarters in Dallas.

Cotton linters, he explained, are about one-tenth as expensive as cotton, and are equally suitable for the manufacture of gun-cotton. Thus far Japan has purchased no linters, but has taken only regular cotton.

Tsukaguchi said Japan is merely making up for the shortage in the Chinese crop, and taking advantage of the cheapness of American cotton in relation to Indian. He said: "China, in proportion to her normal consumption, bought four or five times as much as Japan, but no one accused her of war-like motives. Japan has merely been making up for deficiencies in the Indian and Chinese markets this year. Cotton was priced high in India and the Chinese crop was almost a complete failure."

There is No Substitute for Experience



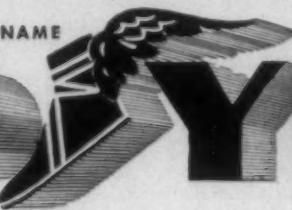
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Other specially designed and constructed Goodyear Belts are recommended for long wear and low replacement costs on Cards, Frames, Slubbers, Spoolers, Looms, Slashers and Breakers.

Why not talk with the G. T. M.—Goodyear Technical Man—about the belt equipment he has specified for many mills, assisting their operations and saving them money? He will call promptly at your suggestion. Write to Goodyear, Akron, Ohio, or Los Angeles, California.

PERSONAL NEWS

W. B. McCall, secretary of the Marion Cotton Manufacturing Company, Marion, S. C., is undergoing treatment at a hospital in Florence.

W. Ray Bell has been elected treasurer of the Textile Export Association, New York, succeeding Perry S. Newell, who resigned on account of poor health.

Emil R. Pohlers has been appointed sales representative for the Grace Mills, Rutherfordton, N. C., with offices at 40 Worth street, New York.

J. L. Nelson, Sr., head of the Nelson group of mills at Lenoir, N. C., who has been ill for some time, is considerably improved.

H. F. Harrill, formerly traveling representative for the Greensboro Loom Reed Company, is now representing the Andrews Company and is making his headquarters in Atlanta, Ga.

W. H. Hardeman, division manager of the Union Division, Consolidated Textile Corporation, LaFayette, Ga., has been elected president of the LaFayette Chamber of Commerce.

Arhtur S. Jarrett has resigned as superintendent of the Chadwick-Hoskins Mills No. 3, Charlotte, and accepted a similar position at the Aragon plant of the Aragon-Baldwin Mills, Rock Hill, S. C.

L. W. Flynn has resigned as overseer of carding and spinning at the Franklin Mills, Greer, S. C., to become overseer of carding at the Baldwin plant of the Aragon-Baldwin Mills, Chester, S. C.

David Clark, editor of the Southern Textile Bulletin, Charlotte, N. C., gave a very interesting address on "The Past and Future of the Textile Industry of the South" to the junior and senior textile students of the Clemson Textile Department.

H. H. Willis, Director of the Textile Department, Clemson College, S. C., has just been appointed as one of the representatives of South Carolina's quota on the Committee of Five Hundred in the Southeastern Economic Council. Mr. Willis' interest is mainly in the textile industry, more particularly in textile research and in textile education.

G. E. Townsend, who has been taking post-graduate work in the Chemistry and Dyeing Division of the Clemson Textile Department, Clemson College, S. C., has recently accepted a position with the Piedmont Print Works, Greenville, S. C.

W. S. Ryland has resigned as president of the North Carolina Bank and Trust Company, Greensboro, N. C., to accept the position of vice-president in charge of finances of the Hunter Manufacturing and Commission Company, New York. He will assume his new duties March 18.

E. L. McCormack, graduate of the Textile Department, Clemson College, S. C., in 1926, who has had considerable experience in fancy fabrics with the Victor-Monaghan Mills, Greenville, S. C., Mills Mill at Woodruff, S. C., and more recently at the Dover Mills, Shelby, N. C., has recently accepted a position as designer with the Oconee Mills at Westminster, S. C.

W. B. Grier has resigned as assistant overseer of the Victor plant of Victor-Monaghan Company, Greer, S. C., to become overseer carding and spinning at the Franklin Mills, of the same place.

Elect Officers for Textile Exposition and Style Show

At the regular meeting of the Tompkins Textile Society, the Textile students of North Carolina State College elected officers and initiated plans for their 1932 Textile Exposition and Style Show. This annual event, which attracts considerable attention, will be held at the Textile School in Raleigh on April 15.

It was announced at the meeting that five colleges had accepted the invitation to participate in the Style Show, and that 71 young ladies representing Catawba, Louisburg, Meredith, Peace and Queens-Chicora Colleges would wear garments which they have made, as a part of their classwork in home economics, from fabrics designed and woven by the Textile students.

Walter C. Taylor, a graduate of the Textile School, who is secretary and treasurer of the Southern Textile Association, advises that the Eastern Carolina Section of this Association will probably hold their semi-annual meeting in the Textile School on the morning of April 15, so that its members can attend the Textile Exposition and Style Show that afternoon.

The officers elected by the Textile students were as follows: Superintendent, J. B. Lamar, Spray, N. C.; assistant superintendent, C. N. Cone, Greensboro, N. C.; foreman of yarn manufacture, E. W. Crow, Mocksville, N. C.; assistant foreman of yarn manufacture, A. H. Willis, Raleigh; foreman weaving, N. R. Whitener, Gastonia, N. C.; assistant foreman of weaving, J. A. Duncan, Raleigh, N. C.; foreman of knitting, E. W. Freeze, Jr., High Point, N. C.; assistant foreman of knitting, Wilson Adams, McColl, S. C.; foreman of designing, M. A. Law, Paw Creek, N. C.; assistant foreman of designing, J. L. Padgett, Cliffside, N. C.; foreman of dyeing, J. E. Gill, Henderson, N. C.; assistant foreman of dyeing, K. A. Bridges, Griffin, Ga.; publicity director, J. Y. Bass, Birmingham, Ala.

Textiles, Inc., Stockholders' Meeting

The annual meeting of the stockholders of Textiles, Inc., Gastonia, N. C., will be held at the company offices on Tuesday, March 1. The company represents the consolidation of 27 yarn mills and was organized last year.

Eureka Mills to Build New Plant

Chester, S. C.—A. H. Robbins, vice-president and general manager of the two plants here of the Eureka Cotton Mills, announced that they plan to erect two units at Plant No. 1, located beyond the city limits, and move the machinery from Plant No. 2, located in the city, and known as the Springstein plant, to these new units.

J. E. Sirrine & Co., of Greenville, S. C., are the architects for the new structures, on which is expected to be started about March 1. The construction contract has not yet been awarded.

Mr. Robbins stated no additional machinery will be purchased.

In moving the machinery from the plant located in the city, the mills will escape municipal taxes, and effect many other savings.

No plans have been made so far, Mr. Robbins said, relative to what will be done with the large vacant plant building when the machinery will have been moved out.

New Plant for Dixie Spindle & Flyer Co.

Dixie Spindle & Flyer Co., Charlotte, has virtually completed construction of its new building at North Brevard and Twenty-second streets and is now installing equipment. The new plant is of mill construction and contains about 7,000 square feet of floor space.

The business was established twenty-seven years ago by A. M. Guillet and is well known throughout the textile industry. Mr. Guillet has invented a number of textile devices including the Guillet system of overhauling and the Guillet (I. T.) roller neck.

OBITUARY

ALEXANDER LONG

Alexander Long, of Rock Hill, S. C., one of the best known mill executives of that State, died Wednesday morning at a hospital in Charlotte where he had been undergoing treatment for some time. News of his death was received at the moment of going to press.

Mr. Long had been engaged in cotton manufacturing over a long period of years. He was president of the Arcade Cotton Mills, and a former president of the Aragon-Baldwin Mills Company. He was also connected with other mills at various times. He was a former member of the Board of Governors of the American Cotton Manufacturers' Association and of the South Carolina Cotton Manufacturers' Association. He was active in the affairs of the Cotton-Textile Institute and a member of the board of that organization.

R. L. POOVEY

Statesville, N. C.—R. L. Poovey, 50, superintendent of Paola Cotton Mills, formerly connected with Cannon Mills in Kannapolis and the Inverness Mills in Winston-Salem, died after a heart attack at his home on West Front street Monday afternoon. He had been ill for two weeks.

Mr. Poovey had been a resident of Statesville for 13 years, coming here from Winston-Salem. He was born and reared at Maiden, a son of the late Forney Poovey. He is survived by his widow, who was Miss May Turner, of Rome, Ga., and four children, the oldest, Robert Lee Poovey, being a student at State College, Raleigh. The other children, Harold, James, Marvin and Betty Jane Poovey, are at home. His mother, now Mrs. Jane Taylor, of Maiden, also survives, as do two brothers, W. E. Poovey and M. T. Poovey, of Granite Falls; two half-brothers, M. H. Taylor, Granite Falls, and A. H. Taylor, of North Wilkesboro, and a half-sister, Mrs. W. J. Simon, of Newton.

G. LEONARD AUSTIN

Easley, S. C.—G. Leonard Austin, age 48, superintendent of the Alice Manufacturing Company, Easley, S. C., died last Saturday after having suffered a stroke of apoplexy. He had been connected with the Alice Mills for nine years and prior to that served twenty years with the Brandon Mills, Greenville, being one of the best known mill superintendents in this section.

Mr. Austin is survived by wife, five daughters and two sons.

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KNITTING TRADE NOTES

Durham Hosiery Nets \$74,504

The Durham Hosiery Mills show for the year ended December 31, 1931, a net profit of \$74,504.03 after providing for depreciation, interest, shrinkage in inventory value, idle mills expenses and machinery alterations and providing for certain contingencies. The report states:

"Our earned surplus account at the beginning of 1931 showed a deficit of \$47,161.18. To this is to be added \$17,145.03, a charge applicable to prior years (which covered cost of the Tar Heel Hosiery Mill litigation in excess of amount provided during the year 1930). After making this adjustment our deficit was \$64,306.21. With this year's profit of \$74,504.03 we have entirely wiped out this deficit and have a balance of \$10,197.82 in earned surplus. This means that now, for the first time in eighteen months, this corporation is operating with an earned surplus of \$10,197.82, besides a capital surplus of \$262,197.07. This is after taking into account all changes due to reorganization and all charge-offs applicable to prior periods.

"Our cost of manufacturing, selling and administration has been reduced throughout the year and our operations have been greatly consolidated. Conditions in textiles, particularly hosiery, remain strenuously competitive, but we feel that our corporation is in a better position to make progress today than it has been for some time.

"The ratio of current assets to current liabilities on December 31, 1931, was more than 9 to 1, as compared with a ratio of 2.50 to 1 on December 31, 1930. During 1931 inventories were reduced from \$831,399.91 to \$483,188.43, or approximately 42 per cent. All merchandise, including materials—raw and in process—is always inventoried at cost or market, whichever is lower.

"On account of the deplorable credit conditions in all South American countries our export business for the year 1931 was only a little more than half of our export business for the year 1930. Our domestic hosiery business for the year 1931 was 75 per cent of what it was for the year 1930, although in units the dozens shipped in 1931 were approximately 90 per cent of the units shipped in 1930.

"Land, buildings, etc., show an increase this year due to the necessity of repossessing an office building in New York, sold by our corporation in 1928. There is invested in this office building at this time approximately \$68,000, part of which is represented by a purchase money obligation of \$40,000. This building formerly contained the New York office of the Durham Hosiery Mill and at the present time is rented on a basis which practically carries the investment.

"During the year notes payable to banks were reduced \$275,000 and bonds were reduced \$25,000. On December 31, 1931, there were no notes payable to banks and bonds were \$325,000. Depreciation, charged into cost, amounted to \$63,644.39 for the past year, bringing our total reserve for depreciation to \$157,872.71. It will be remembered that these depreciation figures are based on reduced appraised plant and machinery accounts. Owing to the decline in prices of commodities during the year there was an inventory shrinkage of \$49,643.99."

Income account for the year ended December 31, 1931:

Sales net	\$2,539,846.01
Cost of goods sold	2,037,888.12
Manufacturing profit, before depreciation	\$ 501,957.89
Selling, administrative expenses	251,192.82
Operating profit	\$ 250,765.07
Less depreciation	63,644.39
Net operating profit	\$ 187,120.68
Additional income	12,361.23
Operating profit, additional income	\$ 199,481.91
Financial and other charges against income:	
Interest paid, net	21,409.06
Shrinkage in inventory values	49,643.99
Machinery alterations, idle mill expenses, etc.	49,614.14
	\$ 129,667.19
Net profit before providing for other con- tingencies	78,814.72
Less added to reserve for contingencies	4,310.09
Net profit after providing for contingencies	\$ 74,504.03

Seek Knit Rayon Standards

The Division of Trade Standards, Bureau of Standards, is to be asked to draft suitable standards for tubular knitted rayon underwear cloth, it was decided at a meeting of the Retailers and Rayon Producers Joint Committee in New York, attended largely by rayon knitted cloth manufacturers. A committee to seek the co-operation of the Bureau of Standards and to work with them in developing tentative standards will be appointed by Major Benjamin Namm, vice chairman of the point committee, who presided at the meeting.

This committee, whose personnel will probably be announced by Major Namm before the end of the week, will consist of I. Rogosin, of Beaunit Mills, Inc., chairman of the newly formed rayon cloth knitters' association; an independent cloth knitter, a representative of the knitters who make both cloth and underwear, a cutter, a yarn producer, a retailer and a representative of the firms whose materials are at present used in weighting rayon underwear cloths.

Berkshire Statement on Ajax Patent License

The Berkshire Knitting Mills, Reading, Pa., officially announces they have taken a license to manufacture lace top stockings under the patent owned by the Ajax Hosiery Mills, Phoenixville, Pa., to prevent annoyance to their customers from litigation.

In taking the license, the statement said, Berkshire was not passing on the question of validity or non-validity of the patent.

Knitting Machines Exported in December

A total of 485 circular hosiery knitting machines, valued at \$93,528, were exported from the United States during December, the Department of Commerce announces.

Of this total 215 machines went to the United Kingdom and 200 to Italy.

Exports of other circular knitting machines numbered 151, valued at \$73,312, 132 machines being shipped to the United Kingdom.

Shipments of other knitting machines and parts for the month were valued at \$50,829, the bulk going to Canada and the United Kingdom.

One full-fashioned machine, valued at \$10,000, was exported in December.

Chipman Shows New Half Hose Numbers

A new line of half hose priced to retail at approximately 59 cents was shown this week by Chas. Chipman's Sons Co., Inc.

The line includes blended designs in tweed effects, lightweight fine twisted material, clocks, all-over and panel effects, all made on 300-needle wrap machines.

C. E. Spivey Given Loving Cup for Services

Scottsboro, Ala.—C. E. Spivey, manager of the Scottsboro Hosiery Mills, has been awarded a loving cup by popular vote as one of the town's outstanding citizens for his efforts in the interests of this section.

Eight years ago there was not a manufacturing plant of any consequence in Scottsboro. The Commercial Club enlisted the interest of Claude Spivey and his associates in establishing a hosiery mill. He became very much interested and through his efforts a corporation was organized with \$10,000 capital paid in.

Mr. Spivey recently bought a full-fashioned mill in Providence, R. I., moving the equipment here. Through his assistance, three other hosiery mills have been established at Paint Rock, Stevenson and Bridgeport, and from an output of 60 dozen five years ago, the Scottsboro Hosiery Mills has reached the output of 6,000 dozen daily.

All these mills are in Jackson county and have furnished work for about 1,000 persons for the last five years.

Mr. Spivey has established offices in New York City. In addition to the hosiery mill industry, he has assisted in the establishment of the Scottsboro Underwear Mill and the Scottsboro Rug Factory that manufactures a rug from the waste of the hosiery mills, also a box factory that manufactures containers for all three plants.

New Transparent Wrapper From Cellulose Acetate

The Eastman Kodak Company has begun production of a transparent wrapping material made from cotton. Most of the transparent wrapping material previously on the market is derived from wood fiber, rather than from cotton.

"Kodapak," as the new transparent wrapping material is called, is manufactured from cellulose acetate, which is also the principal material entering into the production of an important type of film made by the Eastman Ko-

dak Company (safety film) and of the cellulose acetate yarn which the Tennessee Eastman Corporation makes for the textile trade. Although film and the new Kodapak are manufactured at Rochester, all the cellulose acetate used to manufacture these commodities as well as for the yarn is made by the Tennessee subsidiary at Kingsport.

Kodapak has a brilliant, glass-like clarity, and a silvery appearance when it is crumpled in the hand. Its limpness permits it to fold easily and neatly around corners of packages. It is easily cemented in closing packages.

Tests show that Kodapak successfully withstands the action of liquid water without softening or distortion of shape. It is highly transparent and colorless. It does not have a tendency to become brittle in extreme cold and it will withstand high temperatures without coloring.

Direct development of the new product has occupied more than a year and a half, although the Eastman Kodak Company first began experimentation with cellulose acetate, the basis material of Kodapak and other products, in 1907.

Cotton, in the form of cellulose nitrate, is used also by the Eastman Kodak Company in manufacturing all types of film that are not made of cellulose acetate.

Methods of Examination of Knitted Fabrics

Bausch & Lomb Optical Co., during 1931, called attention to two methods of examining knitted fabrics which they have improved.

The two methods are the projection method for which two or three different instruments may be used and the microscope or direct observation method for which several different types of microscopes may be used.

The instrument has a horizontal table upon which the fabric is placed. The illumination passes through the glass center of this table through the fabric to the objective lens, after which it is directed by a first surface mirror to a wall or screen. This is called the silhouette projector since it does not show any color or surface appearance of the yarn.

A more elaborate projector is offered to show both the surface and color characteristics of the yarn as well as the silhouette.

The "Textile Projector" has three sources of illumination, two of which are concentrated on the front surface of the fabric being examined and the third passes through the fabric in the manner of the silhouette projector so that in addition to having a silhouette of the knitted fabric projected onto the screen the color of the fabric can be seen and also the surface characteristic of the yarn.

Red and green filters are supplied to color and to modify the illumination from the rear lamp if this is desired. It gives a bright colored background over which the fabric stands out clearly, illuminated by white light on the front surface.

Probably the most effective means of direct examination of knitted fabrics is found in the wide field binocular microscope, which gives stereoscopic vision with illumination of both surfaces of the fabric. The mirror below the stage throws light up through the fabric which stands out in vivid relief.

Stereoscopic perception and the wide field of view of this instrument gives practically normal vision, allowing you to look with both eyes and see an amazing amount of depth.

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The Missing Element

The statistics of the Association of Cotton Textile Merchants of New York for January show the following:

Sales of cotton goods during January were 145.2 per cent of production.

Shipments during January were 115.5 per cent of production.

Unfilled orders increased 21.5 per cent during January and amounted to 391,150,000 yards at the end of the month.

Stocks of goods decreased 12.5 per cent during January and were at the end of the month 100,000,000 less than at the end of January, 1931.

Not written in the report but indicated by the fact that such conditions did not result in profitable prices is the fact that the backbone of many mill managers has weakened during the depression and now upon the average they have about the stiffness of a first-class jelly fish.

The missing element which would be a considerable factor in restoring profitable operations is backbone of a rigid quality.

Federal Expenditures

The following are Federal expenditures of 1910 as compared with those of the present time:

1910	\$ 693,617,000
1927	3,493,584,519
1928	3,643,519,875
1929	3,848,643,189
1930	3,994,152,487
1931	4,219,950,338

The most significant thing about these figures is that the increase in Government expenses since 1927 is greater than the total of Federal expenditures in 1910.

The recent increases have come very largely as the result of the lobby activities of bureaucrats backed by a union composed of Federal employees in Washington.

Senators and Congressmen who have yielded to the pressure of these lobbyists should be retired in favor of those who have more interest in the taxpayers.

Exchanging Pigs for Yarn

A recent newspaper cable says:

Hungarian weavers, through their headquarters at Budapest, are negotiating in England for the exchange of pigs for yarn. The Hungarians weave cloth, but do not make yarn. Messrs. Greenhagh and Shaw, British, who specialize in yarn, will probably take the Hungarian pigs in exchange for their British yarn.

It would appear from this that in the absence of cash people can still do business through the time-old process of exchange or barter.

The cotton mills of the South should see that every family among its employees raises enough foodstuff this spring and summer to carry it through next winter.

If that is done we may find mill employees exchanging their surplus of canned fruits and vegetables for clothing. Some may even have pigs to exchange.

The Advantage of New Style Hosiery

In our Monthly Knitting Number there have been several comments upon the growing popularity of lace or fishnet hosiery for women.

Possibly the following explains some of its popularity:

Prof. Norman Bradish, of Northwestern University, said today the new style open work hosiery caused an outbreak of cribbing in examinations.

The girls write out before examinations answers to the questions they think may be asked, Professor Bradish said. The answers, he said, are on small pieces of paper and the paper is placed under the stocking.

All that remains is for the co-ed to move her skirt during the test and copy the answer from the paper.

"And," the professor concluded, "what is a professor going to do about it?"

The Author of Proposed Legislation

Most of the extremely radical legislation being considered in South Carolina Legislature has been introduced by S. C. Hicks of Clover.

Prior to being elected to the Legislature Mr. Hicks was a sweeper upon the night shift.

Sweeping in a cotton mill is an honorable profession; in fact, the first cotton mill work of the editor of this journal was as a sweeper in the old Ada Cotton Mills in Charlotte, but if a man of mature age has advanced no further than sweep-

er it does not indicate that he has either the intelligence or wisdom to originate worthwhile legislation.

The great trouble with South Carolina (and North Carolina and Georgia) is that few substantial working men or business men will make enough sacrifice to go to the Legislature and that a majority of our law-makers are not qualified to make laws.

Stop the "Chiseling"

(Reprint from Petroleum News)

Now that business seems to be or may be near the upturn, it is time to lend every encouragement to every warranted increase in prices. The clamor for lower prices should cease and a serious effort made by every one to get prices up. There probably are mighty few instances where higher prices are not direly needed to put industry on its feet.

We have had more than two years now of fighting and loud demand from most everyone for lower and still lower prices. The result is most businesses are running at a loss. Costs have been cut and recut; salaries and wages have been reduced even many times in a single company; people have been laid off and companies shut down, some of them for good.

Certainly we have had about all the weeding out that the mostly unintelligent demand for lower prices has demanded. If we keep on much further industry as a whole will be wrecked and that means that every one will be done for as well as the United States and all other governments. Congress is now discovering that the goose which has been laying the golden egg all these years is just about through and needs a chance to run in the poultry yard and get rested.

It is time for the "chiselers" to stop "chiseling." It is time for the head of the business to go to those in charge of his buying and say:

"Our salesmen are daily up against a lot of 'chiselers' who are getting our prices lower and lower until it is a serious question whether we eat next week or not. The other man's salesmen are coming in here and I suppose they are subjected to the same 'chiseling' process—at all events I know that the companies that sell us pumps, and tanks, and pipe, paint, barrels and automotive equipment and all the rest of it, are mighty hard up and are laying off a lot of heretofore good gasoline customers. A little bit more off their prices and they will be through and then it won't make any difference how cheaply we may buy stuff, we won't have any one we can sell to at any price. So pay the other man a reasonable price, no more than our competitors pay but no less."

Some such a message should be given in person by the head of every business in this country. We say this without reflection on purchasing departments. These same heads of business who are bemoaning their lowering and unprofitable sales prices are also demanding of their purchasing departments still more cutting of purchasing expense. These heads forget that they have a dual role, one as seller and the other as buyer. They have forgotten that if 25,000 important companies in this country are going to sell at a profit, that they must buy at a profit to the other man. Because they are all buying and selling to each other.

Industries might well get together and agree to stop "chiseling" and to pay fair prices. That would be far more effective than to get together about raising prices, if any of them are. With all companies taking less of a "hard boiled" attitude toward salesmen, there would at once be a change in the business atmosphere. The gloom would be largely dispelled. Salesmen would be encouraged and would do a better job of selling. We do not mean that the salesmen should go around and put on a charity sales talk, but that they should be given firm bottom prices, the same to all, and the buyer should recognize such firmness and not try to break it down.

The directors of the American Petroleum Institute might well have a meeting devoted to the buying methods of oil companies and whether the buying policies could not be improved. And these directors might well communicate as a body with similar representative organizations of other industries.

We have all heard a lot for years about the anti-trust laws and how they would catch you if you did not watch out. Various prosecuting officers the country over have warned business that any agreement or understanding as to prices was contrary to those laws. But we, and those officers, have for the most part overlooked the fact that those laws were enacted to insure such freedom of competition as to prevent establishment of monopoly, and not enacted for the purpose of enforcing such a degree of competition as to destroy business.

While it may not be politic for business to openly invite the attention of our vote thirsty and ignorant and demagogic office holders by conspiracies nevertheless industry owes employment to its millions of employees and it owes dividends to its millions of stockholders. Industry's first aim therefore should be to look after all these and to do a good job about it too.

A sympathetic and encouraging attitude toward all price advances today will hurry up our returning industrial health.

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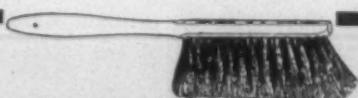
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MILL NEWS ITEMS

SALISBURY, N. C.—Cannon Mills, Plant No. 7, have put in a complete installation of Veeder-Root pick counters.

OSSIPEE, N. C.—United Throwing Company has installed an Inversand water softener as manufactured by Hungerford & Terry, Inc.

BURLINGTON, N. C.—Burlington Mills, N. C. Silk Mills and Alamance Weaving Company have equipped their new looms with Veeder-Root pick counters.

DALLAS, TEX.—Baker-Moise Hosiery Mills are running on a two-shift capacity schedule, with full working quota in all departments.

LINCOLNTON, N. C.—Robert S. Abernethy, former Lincolnton business man but now residing in Winter Haven, Fla., has purchased the interests of J. A. Abernethy, Sr., A. L. Quickel and James A. Abernethy, Jr., in the James Cotton Mills, Inc., located at Maiden, in Catawba county.

The two mills of 6,000 and 2,000 spindles capacity have been idle for a year or more and it is not known just what plan Mr. Abernethy has in mind in regard to getting operations under way.

LOUDON, TENN.—The building for the full-fashioned hosiery manufactures at Loudon, for C. H. Bacon & Co., on which construction activities were begun last fall, is reported ready for the installation of machinery this week. The building represents an expenditure of approximately \$40,000. It is 100 feet by 170 feet, and one-story high.

CEDARTOWN, GA.—Goodyear Clearwater Mills, here and at Atco, Cartersville and Rockmart, all textile plants of the Goodyear Tire & Rubber Co., Akron, O., are increasing their forces approximately 25 per cent, according to statement of P. W. Litchfield, president of the Goodyear Company.

KNOXVILLE, TENN.—A night force has been put on by Athens Hosiery Mills, which now operate a full capacity day and night. Officials there say business is good and they expect to continue to operate with full force indefinitely.

KNOXVILLE, TENN.—Standard Knitting Mills has been reincorporated, the charter on file at the register of deeds office shows. The new charter authorizes 6,000 common and 5,000 preferred shares of stock at \$100 a share. Incorporators are: E. E. McMillan, E. J. McMillan, H. B. Branner, E. J. Ashe, G. J. Ashe and C. S. Rader.

KNOXVILLE, TENN.—President B. G. Nelson, of the Maid-Well Garment Company, which began manufacturing in this city only a few months ago, is now making eighty-three models in dresses and fifteen styles in slips, and he sees definite indications for a good business throughout 1932. Arrangements have been made for selling these Knoxville products direct to the retailer in thirty-seven Southern cities, it was stated.

MILL NEWS ITEMS

BURLINGTON, N. C.—Standard Hosiery Mills have recently installed Veeder type course counters on their full-fashioned machines.

SPINDALE, N. C.—Fletcher Works have just completed installation of additional rayon twistors at Stonecutter Mills Company.

GREENVILLE, S. C.—The Vardry Mill, of this city, which has been idle for about five years, is being dismantled, the machinery having been sold to a dealer of Ath-

TUXEDO, N. C.—W. M. Sherard, ex-mayor of Hendersonville, and W. Max Watson, hosiery manufacturer of Forest City and Spindale, have been appointed permanent receivers for the Green River Manufacturing Company by Circuit Judge J. H. Clement. As soon as bond is posted the receivers will take charge of the mill properties. At the office of the mill it was stated that the new policies were unknown, but the receivers would take charge immediately.

The mill is equipped with 8,400 spindles for producing combed and mercerized yarns.

GREENVILLE, S. C.—An increase in business during 1931 over 1930 was reported from the Woodside and Easley groups of the Woodside Cotton Mills at the annual meeting of officers and stockholders held in the offices of the Woodside Mills, of this city. All officers and directors were re-elected and one new director added to the Woodside group. E. M. Johnston is president of the Woodside Mills and E. F. Woodside is president of the Easley group.

BELMONT, N. C.—The annual meeting of the stockholders of the Acme Spinning Company was held at the mill office. The secretary's report, which showed the mills to be in better position than they were 12 months ago, was termed satisfactory in view of the general condition in the textile business.

Officers and directors of the company were re-elected as follows: A. C. Linberger, president; D. P. Stowe, vice-president; R. B. Suggs, secretary-treasurer, and additional directors: R. L. Stowe, S. P. Stowe, A. C. Linberger, Jr., and J. F. Farror.

ROANOKE, VA.—Construction work has been started on an addition to the plant of the Pannill Knitting Company, at Martinsville, Va., which will add 18,000 square feet of floor space, making a total of approximately 65,000 square feet.

Finley & McCoy, Martinsville contractors, are supervising the erection of the addition, which will be built of brick. It will be 60 by 100 feet, three stories in height, and is to take 60 days to complete. A lot, south of the present plant, is being utilized. Connection between the buildings will be by means of an enclosed passageway, 10 feet wide.

The Pannill Knitting Company, manufacturing kniteted products, began operations in Martinsville in 1925. With a steady increase in business, four additions have been necessary to the initial unit, the new one making the fifth.

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Southern Textile Bulletin

Some Points on Welding

"**A**LMOST any casting can be repaired by welding and some of us are forgetting the possibilities of the use of welding in maintenance work."

"Welding itself is a very broad subject. It first was used by the blacksmith through the method of heating two members in a forge and sawing them with a hammer, intensifying the heat through pressure. Since that time it has gone into resistance welding, fusion welding and thermit welding. A few words about the differences of these methods might be of interest.

"In the resistance welding process the parts to be joined are placed together between two electrodes of a material that does not readily stick to the metal to be joined.

"These electrodes are generally of copper or some alloy of copper, and the heat which is required for the welding is developed through the resistance of the joint to the passage of electric current. This process is familiar to you all, no doubt, as in spot welding and butt welding.

"For thermit welding the parts to be joined are placed in position and the location of the weld inclosed in a mold. Iron oxide and other ingredients are placed in a container above the mold and ignited. At the proper instant the molten mass is turned into the mold, thus joining the parts. This method is commonly used in joining rails.

"The most common process is probably fusion welding, and it may be accomplished with either gas or electricity. It is called fusion because the two parts are brought to a molten state through the application of heat and flowed together. If necessary, extra metal may be added. In gas welding, the source of extra metal would be called a filler rod; in electric welding an electrode.

"Gas welding is probably the most familiar, two gases are used, oxygen being the medium of developing the intense heat and a fuel gas for developing the flame.

"Going to the electric welding, the process was first accomplished through the means of a transformer, to supply a high current at low voltage. The welding arc requires between 75 and 400 or 500 amperes, at a voltage varying from 15 to possibly 30.

"After the development of the transformer, it was determined that direct current was most suitable, and direct current machinery was developed for welding. The arc welding set consists of a generator, usually of special design, driven by a motor of almost any characteristic, or a gasoline engine, or the generator may be driven through a belt from a line of shafting.

"With the electric process the arc is developed between the electrode and the parts to be joined, usually a metallic electrode which acts in itself as a filler rod. In some cases when it is not necessary to add metal or for repairing blow holes in castings, a carbon electrode may be used. In the case of a blow hole the metal is puddled and extra metal added from a filler rod.

"In the last few years, improvements have been made in the generators, for instance, for supplying the current. High current is required, of low voltage, for welding, but it is necessary to have approximately 70 to 90 volts available before the arc is started in order to start it easily. Machines are now available which will deliver the open circuit voltage required, and after the arc is started, drop the voltage to its welding value of 15 to 25 volts, within the machine, without the use of external resistance. This means increased efficiency; it means less current taken

from lines for given welding current values. If you are going to drop the voltage for welding it has to come back again before the arc is started a second time.

"We find that a generator having what may be termed quick recovery, that is, the voltage going back to its open circuit position rapidly, radically increases the speed of welding, not only in the men not having to wait for the arc but in the actual deposition of metal. This is accomplished in the design of the machine as well as in the design of the reactance coil in series with the machine.

"The subject of electrodes is one that has had great consideration in the last few years. A few years ago an operator would use a low carbon or medium carbon electrode for almost any purpose. Today electrodes of various alloys are available. There are electrodes for the welding of stainless steel. The stainless steel rod, of the analysis of the steel to be welded, which may be used for tanks or piping, and so forth, would be supplied with a flux coating, which has a tendency to make a clean weld and to keep some of the oxygen from the air away from the weld. There are electrodes for welding bronze, aluminum and various alloys that up to recently have been considered unweldable by the electric process.

"We are now getting to the point of using shielded arcs. The shielding may be obtained by surrounding the arc with gas flame. We have used hydrogen with good results. It may also be obtained through the use of heavily coated electrodes. The coating may be asbestos, cotton, paper pulp, or flour, usually containing other ingredients of the nature of fluxes.

"The weld developed by the shielded arc process is very ductile, very smooth, and when used in the proper way, free from porosity. Porosity is little holes, likened to blow holes in a casting, which may be found in a weld not properly made.

"I have mentioned the question of ductility because of the fact that the heavily coated electrode or the shielded arc would develop greater ductility than fair or light coated electrodes. In some cases this is desirable. In other cases it is not so important. It is usually found that bare or lightly coated electrodes can be used for a large percentage of welding.

"Cast iron can be welded but strength cannot be obtained in it such as with steel.

"In the first place, cast iron is not originally as strong as steel by a considerable margin. In the next place, we all know what chilled cast iron is. If you heat a small spot in a large casting without preheating the casting, the small spot cooling rapidly becomes very hard.

"Now with welding it is possible to join cast iron to make a liquid tight joint or even a gas tight joint, but directly alongside the weld, in the original cast iron, we find a hard or brittle section which does not lend itself to machining the part is preheated and allowed to cool slowly or anneal.

"In some of the complicated cast shapes, the welding has to be done with the benefit of past experience, as applying heat to some point in the casting might cause cracks to occur in other parts of the same casting, unless preheated. Preheating is of considerable value and also annealing.

"In some cases you may obtain suitable repairs in cast iron by brazing, because of the lower temperature required. In some cases gas welding may be used to advantage because you may obtain some effect of preheating. I might say here that the gas flame will run in the

neighborhood of 3,000 centigrade. The electric arc will run in the neighborhood of 3,500, and the atomic hydrogen, which is an electric arc surrounded by hydrogen, will go to about 4,000 degrees.

"There is a place for both methods of welding on cast iron and I think I will be safe in saying that almost any casting can be repaired with one process or the other and the use of preheating."

"When we speak of preheating it does not mean that you are going to build a fire to do it with. If you have a relatively small casting the gas welding flame does the preheating itself because you are using a large volume of heat at a somewhat lower temperature. The welder will play the torch ahead on his line of welding then go back and bring a particular point up to the welding condition, and continue in this way obtaining the effect of preheating."—W. B. Parker, Master Mechanics' Meeting, Boston, Mass.

The Ramsey-Pulvis Clutch

To meet the demand for an automatic starting clutch which would permit the driving motor, or other prime mover, to come up to speed without load, and also give protection against overload shocks, as well as eliminate the transmission of working strains, the Ramsey-Pulvis Clutch is now offered by the Ramsey Chain Company of Albany, N. Y., which exclusively controls its manufacture and sale in the United States.

The Pulvis principle, which consists of the sure, gradual transmission of power by centrifugally increasing density of hardened steel shot against driving and driven elements of the clutch, is the reverse of American clutch ideas with respect to principle, design and ratings. This clutch can be made as part of the driving member of industrial drives, such as silent or roller chain, flat belt, multiple V-belt, all gear types, or as a coupling on direct connected drives.

The Ramsey Chain Company gives a complete description and illustrations of this able transmission unit in its Bulletin No. 132.

Mill Men to Address Meeting

Textile men will have an important part on the program of a banquet of agricultural, commercial and industrial leaders of the two Carolinas, to be held at the Charlotte Country Club, Charlotte, at 6:30 p. m., February 22. The meeting is called to enlist co-operative action in an effort to improve business conditions.

B. B. Gossett, of Charlotte, president of the Chadwick-

Hoskins Company, and vice-president of the American Cotton Manufacturers' Association, and T. M. Marchant, president of the Victor-Monaghan Mills, will represent the textile industry on the program.

Governor Gardner, of North Carolina, and Governor Blackwood, of South Carolina, W. S. Lee, of the Duke Power Company, R. M. Hanes, of Winston-Salem, president of the North Carolina Bankers' Association, and Dr. E. W. Sykes, president of Clemson College, are among the distinguished guests who will address the gathering.

H. M. Wade, president of the Made Manufacturing Company, Charlotte, is chairman of the banquet and Eddie E. Jones, vice-president of the Independence Trust Company, will act as toastmaster.

Cotton Goods Statistics Best in Years

Statistical reports of production, shipments and sales of carded cotton cloths during the month of January, 1932, made public by the Association of Cotton Textile Merchants of New York, strongly confirm optimistic predictions of the best start in many years. The figures cover a period of four weeks.

Production during January amounted to 232,707,000 yards, or at the rate of 58,177,000 yards per week.

Improved market conditions distinguished the largest average weekly sales recorded in any month since September, 1929. Sales for January, 1932, amounted to 338,010,000 yards, or 145.2 per cent of production. Shipments during the month were substantial, amounting to 268,899,000 yards, or 115.5 per cent of production.

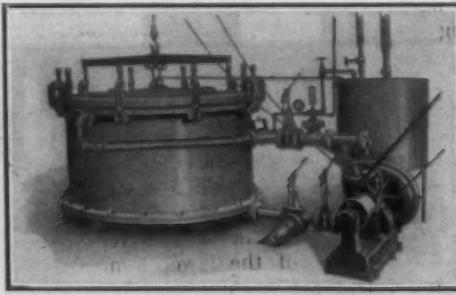
A sharp reduction in stocks during the month, amounting to 12.5 per cent, brings this total down to 254,056,000 yards, or approximately 100,000,000 yards less than the figure reported as of the end of January, 1931.

Unfilled orders at the end of the month were 391,150,000 yards, an increase of 21.5 per cent during the month.

These statistics are compiled from data supplied by twenty-three groups of manufacturers and selling agents reporting to the Association of Cotton Textile Merchants of New York and the Cotton-Textile Institute, Inc. These groups report on more than 300 classifications of Carded Cotton Cloths and represent the major portion of the production of these fabrics in the United States.

London, Eng.—The Lancashire Cotton Corporation purchased 500,000 pounds sterling worth of cotton produced in the Soviet Union. This is the largest Russian cotton transaction in the history of the Liverpool cotton market.

Morton Improved Double Circulating Raw Stock Dyeing and Bleaching Machine



Meet competition successfully, by buying the Morton Double Circulating for long service and modern economy in dyeing. Patented features gladly explained.

Manufactured by

MORTON MACHINE WORKS

Columbus, Ga.

Representative: CAROLINA SPECIALTY CO., Charlotte, N. C.

Review of Market for Southern Textile Stocks During 1931

BY H. J. BLACKFORD

Of A. M. Law & Company

THE general trend of the market for Southern textile stocks during 1931 was one of steady decline beginning with the first of the year and continuing without interruption to the last of December. At no time during the year were there rallies of any consequence. During the first month, it was hoped that there might be some improvement in earnings and market position but April statements disillusioned stockholders and any hopes which they had in July were shattered by earnings figures appearing in August. Decline in earnings was accompanied by steady elimination of dividends, leaving only a few mills paying dividends at reduced rates. The actual volume of trading was very small and the market on many shares was only nominal and would have been changed considerably either way if a large buying order or a large selling order appeared. Most stockholders have decided to hold until times improve, now that quotations are so low.

The decline in market has reflected the general condition of the textile industry rather than general business conditions of the country as a whole. It is entirely possible for general business to improve and for the textile industry to lag behind because of chronic overproduction, price cutting and general demoralization, such as the coal, leather, sugar and packing industries suffered from for years. Constant publicity is being given through trade and local papers emphasizing that the textile industry is showing improvement and is already in splendid shape but these statements are grossly misleading. It is true that Southern cotton mills are operating at a greater percentage of capacity than almost any other industry. It is also true that they are showing a greater loss on operations than most other industries. The question comes up constantly as to why there are not more receiverships and re-organizations. The answer is due to the current financing of mill operations by a few relatively strong commission houses rather than by banks. Many companies would be going through receiverships now if they had a number of creditors other than the commission house through which they sell. If the time comes when these commission houses can no longer carry the load there will be a number of re-organizations. Many mills have been helped also by the low cost of cotton necessitating only small inventories.

There was a relatively small number of well-managed mills or those whose production was unusually well sold which made satisfactory profits in 1931. Even these well-managed companies are beginning to feel the ravages of continued price cutting by weaker mills. Many corporations no longer have excess working capital as the textile industry has not had any general prosperity since 1923. Those companies which have invested their surplus profits in bricks and mortar are feeling the pinch of the bankers' panic of 1931 even more than other companies which have kept their surpluses in cash. In other words, the efficient new plant with low operating cost but without working capital has shown smaller losses but has been more embarrassed than the inefficient high

cost older plant with ample working capital, a portion of which will have to be expended in the future for plant improvement. Some of these companies, however, with a big surplus of current assets have dissipated the greater part of this accumulation in pursuing their usual policy of purchasing a year's supply of cotton which has been declining in market steadily during the last two years.

In looking into the future, there seems to be only one answer and that is to have sound combinations large enough to dominate the market for various types of goods and to secure greater operating efficiency, better results of distribution and an increase in the number of outlets for cotton goods. Many autocrats of the past are now willing to admit that there have been vast changes in manufacturing and merchandising making obsolete former practices and calling for new leadership and co-ordination of effort available only through actual combinations rather than through trade associations. Combinations of strong companies under present conditions are likely to be efficiently set up and to have a profitable future. Mergers attempted in a boom period were usually unsound and were promoted to sell stock or for some other uneconomic purpose. If 1932 does not see constructive progress along these lines, textile stocks are almost certain to be lower at the end of the year than at the beginning, regardless of the tendency of general business of the country.

Cotton Consumed During January

Washington, Feb. 13.—Cotton consumed during January was reported by the Census Bureau to have totalled 435,337 bales of lint and 50,241 of linters, compared with 415,517 of lint and 44,491 of linters during December last and 450,117 of lint and 50,688 of linters during January last year.

Cotton on hand January 31 was held as follows:

In consuming establishments, 1,637,139 bales of lint and 262,226 of linters, compared with 1,630,543 and 252,675 on December 31 last and 1,617,850 and 266,791 on January 31 last year.

In public storage and at compresses, 10,032,322 bales of lint and 51,404 of linters, compared with 10,425,945 and 50,399 on December last, and 7,938,817 and 86,338 on January 31 last year.

Imports during January totalled 12,718 bales, compared with 12,705 in December last and 11,299 in January last year.

Exports for January totalled 919,336 bales of lint and 13,471 of linters, compared with 1,181,089 and 14,169 in December last and 532,821 and 12,876 in January last year.

Cotton spindles active during January numbered 25,013,750, compared with 24,637,864 during December last and 25,628,284 during January last year.

Statistics for cotton-growing States are:

Consumed during January, 358,527 bales, compared

with 344,362 in December last and 355,419 in January last year.

Cotton on hand January 31 was held as follows:

In consuming establishments, 1,303,585 bales, compared with 1,298,713 on December 31 last and 1,210,918 on January 31 last year.

In public storage and at compresses, 9,621,620 bales, compared with 10,013,768 on December 31 last and 7,451,808 on January 31 last year.

Cotton spindles active during January numbered 16,910,894, compared with 16,855,940 during December last and 16,980,850 during January last year.

Fabrics for Spring

Paris, France.—The demand for economy coupled with the ingenuity of Parisian designers has produced cotton which looks like wool, silk which resembles fur or tweed and wool reminiscent or lace.

They are the most interesting stuffs Paris has produced since the war, and their colors are as gay as a school girl's paint box.

Among the outstanding fabric evolutions which smart women will wear this spring are Rodier's cottons wove in heavy ribbed design to resemble tweeds or diagonal wools, artificial silks in nubbly weave which recall astrakhan fur and novelty weaves combining wool, silk, artificial silk and cotton in a heavy ratine effect.

A new bright sapphire blue, sandal-wool brown, beige, grey and watermelon red are among the outstanding early season colors, while lavender-blue, sea-green, banana-yellow, apricot, cream and white are shown for hot summer days.

Plain stuffs promise the greatest popularity, but prints in interlaced effect, small polka dots and Scotch plaids (both silk and wool) already are marked by fashion's favor.

Prints are either a combination of white on brown, blue or black or a welter of many bright tints.

Silks for town are heavy and lustreless, while those for informal and sports wear are as light as a summer breeze.

A new heavy crepe satin with a dull soapy-like surface, a dull crinkly crepe and a shantung stamped with punch-work like English embroidery are among the newest summery fabrics.

Gastonia Women Again Pledge Support To Cotton Goods

Gastonia, N. C.—At an enthusiastic meeting attended by over 200 members of the Gastonia Woman's Club, held here, the following resolution, signed by Mrs. J. H. Separk, president of the club, was adopted:

"Because we live in a community dependent upon the economic status of cotton, we, the members of the Gastonia Woman's Club, unanimously resolve to aid in the consumption of cotton by buying and wearing cotton whenever and wherever possible during the spring and summer of 1932, and we wish to go on record as having made the above resolution."

It is to be remembered that the Gastonia Woman's Club during the spring of 1931 started the "Wear Cotton Movement," which, coming at a psychological time, swept the country, and grew into a national interest. The resolution adopted by the club was to signify their intention of continuing the campaign begun last spring.

Should Demand Protection

Editor Southern Textile Bulletin,
Charlotte, N. C.

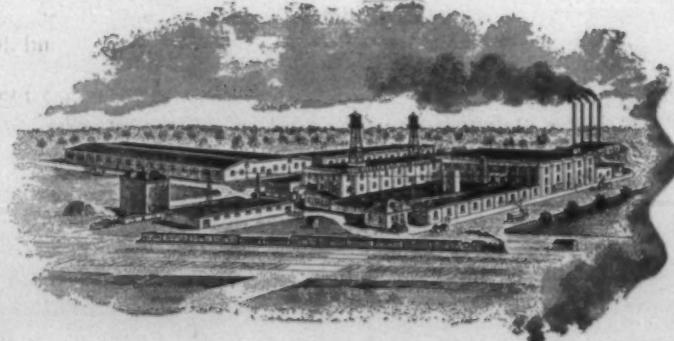
Dear Sir:

Replying to your editorial, "Profiting by Free Trade in Jute Products," I beg leave to offer the following solution: The men who are elected to Congress by the people in the New England States, for the past 50 years, have made it a business to see that tariff laws were made for the protection of the manufacturing plants in their districts, otherwise they lost their seats at Washington. Our representatives have paid little attention to the interests of the farmers or the manufacturing plants that have been built in the South. If the Cotton States Congressmen and Senators would join hands and put on a solid front, they could get a protective tariff for the cotton farmers and textile manufacturers also, but you understand a "protective tariff" is not "Democratic," and until there is a change in the views of the cotton-growing States, we will have to put up with what we get.

THOS. W. HARVEY.

Waxhaw, N. C., Feb. 5th, 1932.

VICTOR MILL STARCH—The Weaver's Friend



It boils thin, penetrates the warps
and carries the weight into cloth.

It means good running work, satisfied help and one hundred per cent production.

We are in a position now to offer prompt shipments.

THE KEEVER STARCH COMPANY COLUMBUS, OHIO

DANIEL H. WALLACE, Southern Agent, Greenville, S. C.

C. B. ILER, Greenville, S. C.

F. M. WALLACE, Columbus, Ga.

L. J. CASTILE, Charlotte, N. C.

91.5% of Cotton Found Tenderable

Washington.—Cotton ginned from the present crop prior to January 16 was higher in grade and longer in staple than ginnings for the corresponding period last year, the Department of Agriculture announced.

Of about 15,991,400 bales of American upland cotton ginned prior to January 16, 91.16 per cent was estimated to be white in color, compared with 85.7 per cent last year; 75 per cent was white middling and better, compared with 69.7 per cent last year and cotton other than white and extra white 6.2 per cent, compared with 9.1 per cent last year.

The estimates of staple length of upland cotton show 5.8 per cent shorter than seven-eighth-inch, compared with 13.4 per cent ginned to the same date last year; 82.8 per cent, seven-eighths to 1 1-32 inches, inclusive, compared with 76.2 per cent; and 11.4 per cent, 1 1-16 inches and over compared with 10.4 per cent a year ago.

From the standpoint of tenderability in settlement of contracts made subject to Section 5 of the Cotton Futures Act, an analysis of the figures indicates a total of 14,633,700 bales, or 91.5 per cent, tenderable, compared with 85 per cent. Of this amount 12,828,500 bales, or 80.2 per cent of total upland, ranged in staple from seven-eighths-inch to 1 1-32 inches, inclusive, and 1,805,200 bales were over 1 1-32 inches in staple.

One million three hundred fifty-seven thousand and seven hundred bales, or 8.5 per cent, of upland cotton were untenderable, compared with 15 per cent of last year's crop ginned up to the same date. Of these, 428,500 bales were untenderable on account of deficiency in grade only.

New Orleans Re-elects Officers

New Orleans.—A. B. Wheeler, Jr., has been re-elected president of the New Orleans Stock Exchange.

Other officers, also re-elected, were: John Dane, first vice-president; C. H. Hyams III, second vice-president, and A. W. Mysing, treasurer. Directors of the exchange, who also serve as the governing committee, elected besides the officers, were: Allen C. Huggins, H. M. Butler, Larz E. Jones, St. Denis Villere, Jeffrey Steinhardt and George E. Williams. Larz E. Jones and Jeffrey Steinhardt are new members of the board of directors.

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for Draper, and for 4-box magazine
looms, on plain and fancy work. Ad-
dress "Overseer," care Southern Textile
Bulletin.

GILL LEATHER
TOP ROLL
means MORE PROFIT
because BETTER YARN.
FEWER BREAKS, and
FASTER PRODUCTION

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Research in the Textile Industry

(Continued from Page 10)

specifications for other parts, and this is carefully controlled.

Of course, it is a temptation to go more thoroughly into detail as to what my particular company is accomplishing, but I really wish to ask you to consider the proposition from the standpoint of the industry rather than to expect that I am trying to sell you our product, and I may bore you by going into these things at such length, anyway.

SPINNING RING PERFORMANCE

May I now refer to some items of spinning frame performance, and to suggest consideration of a different approach to questions of how best to handle a spinning frame. No doubt the superintendent and the overseer are obliged to use to the best advantage the tools and equipment furnished them. Nevertheless, an even more thorough knowledge of the equipment and its performance will doubtless aid these very men; for upon them the management largely relies for results, and any such knowledge and such aid will be of mutual benefit.

I have something of a hobby in that I urge acquiring the habit of asking ourselves, and others, the old simple "why?" I have always felt that when we were certain that we had dissected or analyzed the problem so as to have all of the factors separately and clearly before us, and we thoroughly understood each factor in the make-up of the whole problem, that we then could put the whole together with a clear understanding of it, and if an answer is called for, the answer then would be plain. The minutes of your meeting of November 14, 1929, record that the discussion started by asking what would be the best spindle speed for 40s warp, and testimony was given to show that speeds ranging from 9,000 to 9,500 were common.

Now, life is too short, and it would be impractical to make such a thorough examination of every mill, even if it were permitted, to determine in that way all the "whys," but if we work in terms of principles or governing factors that may be generally applied, we may expect to make progress. Take for example this question of spindle speeds, what are the governing factors? Allusions were made in that meeting of different staples and of different traverses, and these certainly are among the governing factors. There are other governing factors, and there is one in particular which I do not often hear included in such a discussion, and that is traveler speed. In our own recent spinning frame pamphlet we have included a column of traveler speeds to accompany the respective ring sizes and spindle speeds. I wish we might have included a column or table giving the circumference of all sizes of rings in terms of feet circumference. However, one can readily determine his traveler speed in feet per minute.

At the meeting referred to, one member stated that he ran satisfactorily at 9,500 r.p.m. with 1 $\frac{5}{8}$ -inch rings, but when he tried the same speed on 1 $\frac{3}{4}$ -inch rings he was obliged to reduce the speed. I suggest that he might properly have stated that at 9,500 r.p.m. with 1 $\frac{5}{8}$ -inch rings, which is a traveler speed of 4,035 feet per minute, his work ran all right, but when he tried to run 9,500 with 1 $\frac{3}{4}$ -inch rings, which gives a traveler speed of 4,352, his work did not run well.

There are other factors that may enter this problem here, such as diameter of bobbin, angle of pull of yarn, traveler used, weight of package for spindle employed, viscosity of oil, plumbing of spindles, and possibly others, but on the assumption that all such factors were normal, it appears that a difference of 320 feet in trav-

eler speed made the difference in running. I can easily believe that, and I am pleading for more consideration of this problem; for I want to point out that with the same traveler speed the friction or drag of the same weight of traveler would be less with the larger diameter of ring. This can be proven by experience and also very easily by mathematics. In mathematics or in high school physics, we learn that the centrifugal force increases according to the square of the velocity, but decreases directly with the radius of the circle. It is easy to remember this in terms of centrifugal force equals mass times velocity squared divided by the radius.

So to pursue that problem a step further, had the member reduced his spindle speed with 1 $\frac{3}{4}$ -inch ring to keep the same traveler speed, he would have reduced the drag of the traveler 1-14, or 7 per cent plus.

On the other hand, had he maintained the same spindle speed he would have increased the drag in proportion to the square of the increased traveler velocity modified by the larger diameter of ring. This figures an increase of drag of 8 per cent over the original 9,500 r.p.m. with 1 $\frac{5}{8}$ -inch ring.

It appears it is not necessary to reduce the spindle speed enough to maintain the same traveler speed as with the smaller ring, when going to a larger ring. So, then, what spindle speed will give the same traveler drag with 1 $\frac{3}{4}$ -inch as with 9,500 r.p.m. and 1 $\frac{5}{8}$ -inch ring. This figures out 9,135 r.p.m. This also figures a traveler speed of 4,175 feet.

It may be some will say I do not believe that an increase of 8 per cent will make the difference I found. I hope you may be able to prove it, if it is not the traveler speed, for that will bring us back again to the "why," and when we get the true answer to the "why," we shall find our real limitation and be able to move ahead, when we are able to overcome that limitation. We sometimes hear it said that theory and practice do not always agree. I believe if we adopt the word "explanation" rather than theory we shall often gain by it, and surely practice and explanation must go hand in hand. When they do not, it is because we have not arrived at a complete understanding of what occurs.

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COTTON GOODS

New York.—The volume of cotton goods trading last week was smaller, but the market held on a firm and steady basis. Prices were maintained without change, although buyers of gray goods were slow to pay the current prices. The improvement in general business sentiment, coupled with definite announcement of a shorter working week for the print cloth mills, which is expected soon, is counted upon to make for renewed trading on a larger scale. Already more than 95,000 of the 110,000 print cloth mills have given assurance that they would adopt the shorter week and the necessary 90 cent, it is believed, will be reached.

Fair sized lots of print cloths were sold by second hands at a sixteenth of a cent under selling agents' prices. Buyers were inclined to proceed cautiously until definite announcement of print cloth curtailment is made, although it is already accepted as a foregone conclusion.

Carded broadcloths were somewhat more active than they had been earlier in the week. Sales of 36½-inch 5.10-yard 80x56s were reported in a number of centers at 4 cents to 4½ cents, depending on deliveries. Second hands freely offered 37-inch 4.10-yard 100x60s at 5¾ cents, but these were absorbed nicely.

In fine goods, encouraged by the fact that sheer cottons were being bought continuously, even though in small quantities, a number expressed disappointment in the fact that the amount of spring business in these types to date has been somewhat under what had been anticipated. Not only are buyers of gray goods unwilling to anticipate even to the smallest degree their requirements in such goods as lawns, pongees, organdies, voiles and the like, but buyers of finished goods have adopted similar policies and have stuck to them in the face of an advancing spring season, with the result that orders in the hands of converters are small, causing light fill-in orders.

Cotton goods prices were as follows:

Print cloths, 28-in., 64x60s	3
Print cloths, 27-in., 64x60s	2½
Gray goods, 38½-in., 64x60s	4
Gray goods, 39-in., 68x72s	4½
Gray goods, 39-in., 80x80s	5¾
Brown sheetings, 3-yard	5¼
Brown sheetings, 4-yard, 56x60s	4¾
Tickings, 8-ounce	12
Denims	9½
Dress ginghams	10½
Standard prints	6¼
Staple ginghams	6½

Constructive Selling Agents

for
Southern Cotton Mills

J. P. STEVENS & CO., Inc.

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New York City

YARN MARKET

Philadelphia, Pa.—The yarn market showed a tendency to become somewhat spotty and irregular during the week. Aside from some contracts in underwear yarns, most buyers were content to fill in their nearby needs. An encouraging feature was the continued call for delivery on old contracts and the yarn movement continued active. The difference between buyers' and sellers' price ideas was somewhat more pronounced and spinners were hard pushed to maintain quotations. Spot demand for yarn continues fairly strong and the total sales from this buying were fairly large.

New orders were less than enough to support prices, but spinners have continued to receive shipping orders on a considerable scale against existing contracts and this has enabled most of them to avoid competing for immediate new business by cutting their prices again. Sellers' confidence in their ability to maintain prices has weakened since last month, some local houses reporting that demand for yarn has again become very quiet.

A source of support for yarn rates is the unwillingness of spinners to sell very far ahead when extra concessions are demanded. Dealers occasionally get into negotiations with customers who name a figure and say they would be willing to contract for several months' supply of yarns on such a price basis. This means practically that spinners accepting such business would either have to rely on a new decline of about 2 cents in cotton, or would have to consent to taking a substantial loss on part of their future production in the hope of recouping on other business through some fortunate turn later in the year.

There were reports of the knitting division ordering less poundage during the last few days. Quotations were called nominally unchanged, but there has been a weaker tendency underlying the situation that sometimes comes out upon fair inquiry being broadcast.

Calls for up to 50,000 pounds came from weavers of these goods. Weavers were not much in evidence, though they found occasion to cover every day on relatively small amounts of yarns.

Southern Single Warps		80s	20
10s	14	40s	27
12s	15		Duck Yarns, 3, 4 and 5-ply
16s	16	8s	14 1/2
20s	16 1/2	10s	16
26s	19 1/2	12s	16 1/2
30s	20	16s	16 1/2
		20s	17 1/2
Southern Two-Ply Chain Warps			
8s	14		Carpet Yarns
10s	14 1/2		Tinged Carpet, 8s, 3 and 4-ply
12s	15		18
16s	16		White Carpet, 8s, 3 and 4-ply
20s	16 1/2		14
24s	18 1/2		Colored Strips, 8s, 3 and 6-ply
30s	20		14 1/2
36s	26		Part Waste Insulating Yarn
40s	27	8s, 1-ply	12 1/2
		8s, 2, 3 and 4-ply	12 1/2
		10s, 1-ply and 3-ply	13 1/2
		12s, 2-ply	13 1/2
		16s, 2-ply	16
		20s, 2-ply	16 1/2
		26s, 2-ply	18
		30s, 2-ply	20
Southern Single Skeins		Southern Frame Cones	
8s	13 1/2	8s	13 1/2
10s	14	10s	14
12s	14 1/2	12s	14 1/2
14s	15	16s	16
16s	15 1/2	20s	16 1/2
20s	16 1/2	24s	17
24s	18 1/2	26s	18 1/2
30s	19 1/2	30s	19 1/2
Southern Two-Ply Skeins			
8s	14		
10s	22-24 1/2		
12s	25		
14s	25 1/2		
16s	26		
20s	26 1/2		
24s	28		
30s	28 1/2		
	29 1/2		
	30s		

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Last Longer, Make Stronger Yarn, Run Clear, Preserve the SPINNING RING. The greatest improvement entering the spinning room since the advent of the HIGH SPEED SPINDLE.

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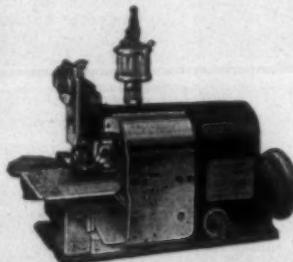
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SOUTHERN SPINDLE & FLYER CO., Charlotte, N. C., Wm. H. Monty, Mgr.

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TERRELL MACHINE CO., Charlotte, N. C., E. A. Terrell, Pres. and Mgr.

TEXTILE DEVELOPMENT CO., THE, 1001 Jefferson Standard Bldg., Greensboro, N. C. Sidney S. Paine, Pres. Ga.-Ala. Rep., Robert A. Morgan, Rome, Ga.

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VISCOSE CO., Johnston Bldg., Charlotte, N. C. B. Wick Rose, Mgr.

WHITIN MACHINE WORKS, Whitinsville, Mass. Sou. Offices: Whitin Bldg., Charlotte, N. C.; W. H. Porcher and R. I. Dalton, Mgrs.; 1317 Healey Bldg., Atlanta, Ga. Sou. Reps.: M. P. Thomas, Charlotte Office; I. D. Wingo and C. M. Powell, Atlanta Office.

WHITINSVILLE SPINNING RING CO., Whitinsville, Mass. Sou. Rep.: Webb Durham, 2029 East Fifth St., Charlotte, N. C.

Woolens and Silks In Textile Show

Greenville, S. C.—Woolen and silk industries will be included in exhibits at the 1932 Southern Textile Exposition to be held in Textile Hall beginning October 17, it was announced.

ed by Exposition officials. Invitations are being extended to officers and department heads of worsted and silk factories over the South.

More than 75 per cent of all available space in the hall has been contracted for and reservations for the remainder are being made. The program includes the fall convention of the Southern Textile Association, a meeting of the Greenville section of Textile Division of the American Society of Mechanical Engineers, and other groups. Greenville Country Club will be open to all exhibitors and visiting textile men.

Extensive repairs have been made on the Textile Hall. A wide vestibule with storm doors at the Washington street entrance has been constructed. A temporary addition will connect the main hall with the annex.

During Exposition week the Southern Railway will operate Pullman cars from Greensboro and Atlanta. These cars will be parked in Greenville the day of arrival, returning to point of departure late that night. Baggage may be left in the cars so that visitors may attend the Exposition without having to obtain hotel rooms.

Bill Exempts Mill Annexes From Tax

Columbia, S. C.—The bill exempting additions to the Pacific Mills costing more than \$25,000 from Spartanburg county taxes was ratified and sent to the Governor for his signature.

Centrifugal Pumps For Handling Hot or Cold Acid

Allis-Chalmers Manufacturing Co., Milwaukee, Wis., is building a new pump for handling acids in process work. It is of the single suction type and all parts coming in contact with the acid pumped are made of chrome steel. To insure uniform expansion from the center of the pump when handling acids of high temperature, the casing is supported on the horizontal center line by brackets and it is also keyed on the vertical center line underneath the water cooled stuffing box.

The pump is so constructed that the rotating element including the self-aligning, anti-friction, bearings and the Falk coupling can be removed through the suction end of the pump without disconnecting the discharge piping or casing brackets or disturbing the motor.

Tests of these pumps show very high efficiency and quiet operation.

New Foreign Knit Collection Shown

Milanese and tricot constructions in various weights and finishes made of Bemberg or with Bemberg content have been imported from foreign markets by the American Bemberg Corporation and are now being displayed in this country to show the possibilities in knitting this fiber. Types which are suitable for lingerie and negligees, as well as types that are suited to outerwear, are included.

In the latter connections, an effective type is shown that combines Bemberg with acetate. This range highlights color contrast developments, with tiny white patterns of tailored aspect featured. It is suggested for town frocks or tailored sportswear costumes.

Southern Railway System Announces

Greatly Reduced Round Trip Fares

\$14.61

Charlotte-Washington and Return

George Washington Bicentennial Celebration, Alexandria, Va., and Washington, D. C., February 22nd. Costume Parade, Pageant and many other attractions. Round trip fares from all stations One Fare plus \$1.00 for the round trip. Tickets on sale Feb. 20th, limited returning Feb. 24th, 1932.

Charleston, S. C.

One Fare plus one-half fare for the round trip. Dates of sale, Feb. 14th, 16th, 18th, 21st, 23rd, 25th, 28th, March 1st, 3rd, 6th, 8th, 10th, 13th, 15th, 17th, 20th and 22nd. Final limit 7 days. Account of the early season the Magnolia and Middleton Place Gardens are very beautiful now. Many other attractions and historic places.

Easter Excursions

Round trip fares between points in the Southeastern States, one fare plus \$1.00 for the round trip. Dates of sale March 23rd, 24th, 25th and 26th. Final limit 15 days. Plan your Easter Vacation now.

Ask Ticket Agents or address:

R. H. GRAHAM
Division Passenger Agent
Southern Railway Passenger Station
Phones:
2-3351 and 3-6161—Branch 25
Charlotte, N. C.

Mill Village Activities

Edited by Mrs. Ethel Thomas Dabbs—“Aunt Becky.”

Austell, Ga.

CLARK THREAD COMPANY

Clark Thread Company, mill and village, are conspicuously picturesque and unusually attractive. The grounds are artistically laid out and lawns are beautifully green. Evergreens and other shrubs and flowers have been planted. The homes are modern in every way and to be queen in one of these pretty cottages or bungalows is a daily joy to the housewife.

We have a number of friends at this wonderfully nice mill. Stomy Drake, agent, is well known and greatly esteemed in the South for successful textile manufacturing, and for fair and square dealing with his fellow men.

A. E. Escott, office manager, is a well known business man from Charlotte, a textile graduate, and was associated with his father, the late Geo. E. Escott, in the publication of Mill News, which was read by more textile operatives than any other paper published.

George C. Cauble, formerly of Griffin, is overseer carding, and O. B. Ward, a LaGrange friend, is second hand; E. B. Williams, E. L. Ellerbe and T. W. Puckett, section men; W. H. Thompson, speeder fixer.

J. C. Gammon, from Exposition Mill, Atlanta, is in charge of spinning and W. T. Williams, from Standard-Coosa-Thatcher Company, Chattanooga, Tenn., is second hand in spinning and R. J. Doss is second hand in twisting.

J. E. Howell, for years with Dixie Mill, LaGrange, but more recently with Lullwater Manufacturing Company, Thomson, Ga., is superintendent of power. He and his charming better half showed us all over their lovely home.

W. H. Pearman is in charge of laboratory.

Opelika, Ala.

PEPPERELL MANUFACTURING CO.

This nice, modern mill and village is the pride of Opelika. The old mill couldn't hold its head up after Pepperell moved in, so just gave up and quit. It always gives us a thrill to find a pretty, new, clean, modern mill and village; but there is also a feeling of sadness when we see old mills closed down, window lights broken, village homes deserted and going to ruin.

We found several old friends at Pepperell Mill, who seemed pleased to see us; but, it was the first time we had met Superintendent H. M. Carter, who welcomed us cordially and made us feel “at home.”

E. T. Combs is overseer of carding, with A. A. Had-dox and Henry Hawkins, second hands. C. E. Davis is overseer spinning, with H. T. Pickering and P. W. Mc-Kee, second hands.

D. F. Poole is overseer weaving and slashing, with D. D. Golden and W. A. Cunningham, second hands in weaving, and M. W. Robinson, second hand in slashing and drawing-in. C. L. Duke, overseer the cloth room.

Misses Inez Jones, Brookie Noland and “Boots”

Franklin are timekeepers in carding, spinning and weaving departments.

This is a mill that is as pretty at back as at front. Lovely lawn grass and shrubs help to make an artistic layout very attractive.

A FINE SUNDAY SCHOOL

The Men's Bible Class is making history and a record to be proud of. There are 200 members in this one class and an unusually fine percentage present every Sunday. They recently had a barbecue supper which was much enjoyed, and brought the members even closer together in the bonds of Christian love. The carder, Mr. E. T. Combs, is president of this class, and Mr. — — Gilmer is secretary and treasurer. Somehow we failed to get the name of the teacher.

Munford, Ala.—Southern Mills Corporation

I had no idea of seeing anyone here that I knew and was pleasantly surprised to find J. E. Carter, the superintendent. I first knew him in Jacksonville, Ala., when he was a young man employed in Profile Cotton Mills, and ambitious to make good. W. I. Greenleaf, president of Profile Cotton Mills, took great interest in J. E. and saw to it that he went to school and received proper training for textile service.

Mr. Carter says that when he left Mr. Greenleaf, who had been such a friend to him, he could not keep the tears back. But his opportunity came and he felt that he must accept.

This nice little mill runs day and night and makes wrapping twine.

A. D. Kimberly is overseer carding; E. Burke, overseer spinning; J. H. Adams, master mechanic; E. H. Elders, night overseer.

Ed Branch, a very pleasant young salesman for the Atlanta Belting Company, was in Mr. Carter's office and made some highly complimentary remarks about The Southern Textile Bulletin and the work done by Mr. David Clark and “Aunt Becky.”

Mr. Branch informed us that an associate worker of his, Mr. Julian Harris, was locating in Charlotte and looking after the interests of the Atlanta Belting Co.

Anniston, Ala.

When we reached this pretty town, we got badly turned around. The sun rose in the West, set in the East. When we wanted to go north we'd go south, and vice versa, and finally, Uncle Hamp got so comfuddled that he put his pants on backwards, and I wore my hat hind part before!

We don't know of a prettier business street than Noble, which is about all of the town. All the leading hotels, the postoffice, banks and stores are on this street, and there's a big drug store in almost every block.

ANNISTON MANUFACTURING CO.

Here's where we found a very remarkable man—W. E. Erwin, overseer carding and spinning, who has been with the company 42 years. He started here as a small boy, worked ten weeks “learning,” then worked making bands

for 17½ cents per day of 12 hours. He made bands three months and then became a sweeper at 20 cents per day—and later became a doffer and all the way up through spinning and card rooms. He is now a big real estate holder and owns valuable property in the city.

His life and achievements are an inspiration to others. He has proven that it pays to "stick to your bush." J. W. Kimberly is his live-wire assistant in carding; L. M. Daniel is overseer weaving, assisted by D. C. Bennett on day line and W. F. Hefner at night.

James Craft, overseer the cloth room, used to be at Cascade Mill, Mooresville, where he was captain of a fine ball team and a good reporter for these columns. His brother is supply man.

It is always a pleasure to visit this friendly place, where A. L. Tyler is president and treasurer and F. O. Tyler is secretary.

Thomaston, Ga.

"SILVERTOWN"

Silvertown is the name of the pretty village of Martha Mills, Textile Division of B. F. Goodrich Company. We paid a visit to this, one of the best mills in Georgia, but unfortunately it was not an opportune time, for everybody was busy with some kind of a big change to be made—and Mr. Matthews was away.

However, we did have time to see R. J. Adams, the superintendent of spinning, who was formerly with Dixie Mill in LaGrange, and met his assistants, J. B. Allen, A. O. Teal and E. E. Wilkerson. Mr. Teal is the son of our good friend, Wiley Teal, of the Mansfield Mills, Lumberton, N. C.

Had a glimpse of Superintendent J. C. Edwards, who is as elusive as the Irishman's flea—"When you think you've got your finger on him and look to see, 'begorra,' he's gone!"

There is not a mill anywhere more modern than Martha, which, like the Biblical Martha, is "careful over many things"—in fact, everything. Those who have been fortunate enough to secure work here count themselves blessed. The surroundings inside and out are ideal, and landscape gardening so successful that the results indicate a master hand and an artistic mind.

The large and beautiful trees and shrubbery about the mill leave the impression that the place has been many years in the making instead of only a few.

Alexander City, Ala.

AVONDALE MILLS

At last, we have met all the illustrious sons of that great and grand old gentleman, Ex-Governor B. B. Comer, deceased. J. F. Comer, vice-president and manager of the mills at Alexander City, like all the others, possesses a charm of manner that captivates and holds the interest and friendship of all who know him. His employees are generous in their praise of him and always add: "And Mrs. Comer is the best woman in the world."

Our big fat Still had just been around and left little for us to do in the way of getting subscriptions, but we did secure a few, and one of them was Mr. Comer. F. G. Tapley, overseer slashing; G. A. Phillips, section man in spinning; F. J. Guy, head card grinder; A. G. Smith, overhauler, and W. S. Mitchem, section man in picker room, are on our list and we appreciate them all.

We met many fine people here and saw some wonderfully charming girls—all in uniform same as at Sylacauga.

Since this mill was acquired by the Avondale Mill Company it has been enlarged and improved according to their ideas of progress and is a plant and village the town is proud of.

Superintendent J. L. Byars is an exceedingly pleasant and gracious gentleman and gave us the kind of welcome that warms the heart.

Alabama City, Ala.

DWIGHT MANUFACTURING CO.

This is one of the really nice mills of Alabama, a State that is fast coming to the front in textiles, and has this advantage—there are not too many mills.

Mr. Allen Little, agent Dwight Manufacturing Company, is favorably known throughout the South and has thousands of friends who will be glad to know that he is well and that he at last has a boss—his little grandson! We were delighted to see Mr. Little again. We count him among our best friends.

C. H. Moody is superintendent; B. L. Turner, carder; Wm. O. Achilles, spinner; John Thompson, weaver; S. L. Long, finisher; L. R. Rossiter, overseer cloth room; Hoyt Wiggington, master mechanic.

This mill has 448 cards, 74,492 spindles and 2,080 looms.

Goldville, S. C.

THE JOANNA NEWS

We hear a lot about dignity and most of it seems to apply to folks who are old and important, but there is no reason why it shouldn't apply to boys and girls as well. What is dignity, anyhow? It isn't stiffness or offishness, or anything disagreeable. It should be fine and pleasing to see. Our idea is that to be dignified means only to behave in all circumstances with a decent self-respect. Boys and girls can do that as well as grandfathers and grandmothers.

Miss Clara Bobo of Clinton spent the week-end with Miss Doris Abrams.

Mrs. C. E. Cooksey and Mr. H. C. Moore of Gaffney, S. C., visited Mr. and Mrs. R. G. Carr Sunday.

Little Bobby Jean Carr spent the week-end with her grandmother in Gaffney, S. C.

Mr. and Mrs. Glenn Oxner of Blacksburg, S. C., and Mr. and Mrs. P. W. DeVore and daughter of Spartanburg, S. C., visited Mr. and Mrs. B. W. Oxner Sunday.

Mr. B. M. Whitmire of Woodruff spent the past week with his daughter, Mrs. T. L. Ellison, Magnolia street.

Mr. and Mrs. H. Lucas spent the week-end with relatives in Laurens, S. C.

Mrs. B. W. Crouch, Sr., and son, B. W. Crouch, Jr., of Saluda were Sunday guests of Miss Floride Crouch, Joanna Inn.

Mr. P. M. Rhodes and family and Mr. and Mrs. John Feltman spent Sunday with Mr. and Mrs. W. A. Garrett, Laurens, S. C.

Friends of Mr. A. R. Harrelson will be glad to know that he returned Thursday from the Newberry Hospital where he had been a patient for two weeks.

Friends of little Miss Annette Moorhead will be glad to know that she is doing nicely after undergoing a tonsil operation last Saturday.

February 18, 1932

CLASSIFIED ADS.

WANTED—Position as overseer, fixer or weaver. 25 years experience on cotton, wool, worsteds, pile fabrics, silk and rayon crepes and taffetas, etc. Sober, unmarried, and willing to go anywhere. A. F. F., care Southern Textile Bulletin.

FOR SALE—4,000-5,000 4x6 second hand metal bound spools. Price and samples on request. Lowell Shuttle Co., Lowell, Mass.

WANTED—Position as superintendent. 33 years experience in mill, all departments—erecting cards, fixing, carding, spinning, second hand, both carding and spinning, 10 years overseer carding and spinning; 13 years superintendent of one mill. I. C. S. Graduate. Reference, all former employers. Age 47, will go anywhere in South. R. T. B., care Southern Textile Bulletin.

KNITTER WANTED by large corporation to superintend small knitting mill. Production men's socks. Must have successful record. Excellent opportunity for right man. "Hose," care Southern Textile Bulletin.

Small Seismograph Measures Vibration

Measurements in thousandths of an inch of vibrations in machinery is made possible by an application of the electric micrometer to produce a miniature seismograph in the laboratories of the General Electric Company.

Within the case of the device, which is bolted to the machine under

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investigation, is a block of lead suspended by springs. The shell of the detector vibrates with the machine, but the lead weight remains fixed in space. Within this weight are two coils on opposite sides energized by 500-cycle alternating current. In front of each coil is a piece of magnetic steel fastened to the shell. These are adjusted to zero readings. When vibration is set up, the distance between the steel and the coils varies and the flow of the current is affected, giving the readings.

A pressure indicator and a strain gauge have been constructed on similar principles.

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is by train. The safest. Most comfortable. Most reliable. Costs less. Inquire of Ticket Agents regarding greatly reduced fares for short trips.

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Southern Railway System

Grace Line Via New York
Panama-Havana, 16 days \$242.00
Peru, 23 days 452.00
Chile, 37 or 51 days 632.00

Cruises include all expenses from Charlotte and return, except meals en route to and from New York.

(U. S. Tax \$5.00. Passports not required.)

Eastern Steamship Company Via New York

West Indies, 13 days, \$152.00 up. Rail to New York, Steamship from New York to Florida, thence through the West Indies including two days and night in Havana and 140-mile motor trip in Florida, covering over 3,800 miles of travel through Southern climes. Return via New York and rail home. Cruise includes all expenses except meals en route to and from New York.
(U. S. Tax \$5.00. Passports not required.)

West Indies Via Miami, Florida

8 days, \$145.14 up.

Rail to Miami, thence Eastern Steamship Company to West Indies. 1,786 miles visiting three ports and many resorts in Florida. Cruise includes all expenses except meals en route to and from Miami.

(U. S. Tax \$5.00. Passports not required.)

Dates of sailing from New York:
February 5th and 19th, March 4th.

Dates of sailing from Miami:
February 8th and 22nd, March 7th.

All expense cruises quoted from other points on application.

For reservations and additional information consult:

R. H. GRAHAM, D. P. A.
Southern Railway System
Charlotte, N. C.
Telephones:
2-3351 and 3-6161 Branch 25

Here are the Crucial Minutes

*... which the
business paper
helps to save*

"Mr. Smith," calls the secretary. The first of a line of waiting salesmen, hurriedly collecting hat and sample case, enters the buyer's office. A ground-glass door closes behind him. The other men shift, recross their legs and settle down to wait their turn. It won't be long now.

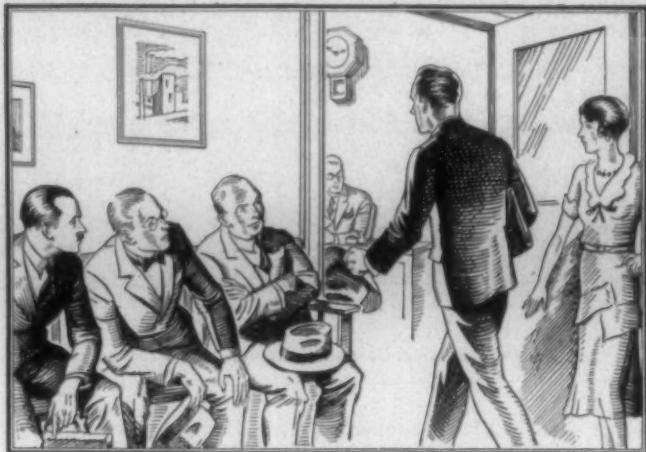
And it won't! For the average time given to salesmen is brief—heart-breakingly brief, sometimes. In retail stores it varies between 4 minutes in department stores and 21 minutes in furniture stores, with an average for all lines of 12 minutes per interview. In industrial concerns it is scarcely longer.

Yet within those few minutes every actual sale must be consummated. Here, within the walls of one room, across one desk, and in the space of a few hundred seconds are focused the entire efforts of management, production, advertising—to stand or fall on

the result of personal salesmanship. Here are the crucial minutes when a man must sell.



THIS SYMBOL identifies an ABP paper . . . It stands for honest, known, paid circulation; straight-forward business methods, and editorial standards that insure reader interest . . . These are the factors that make a valuable advertising medium.



And because these selling minutes are so few, so precious, it is important to save them for actual selling, to free the hands of salesmen for the important work which can only be done face to face with the buyer.

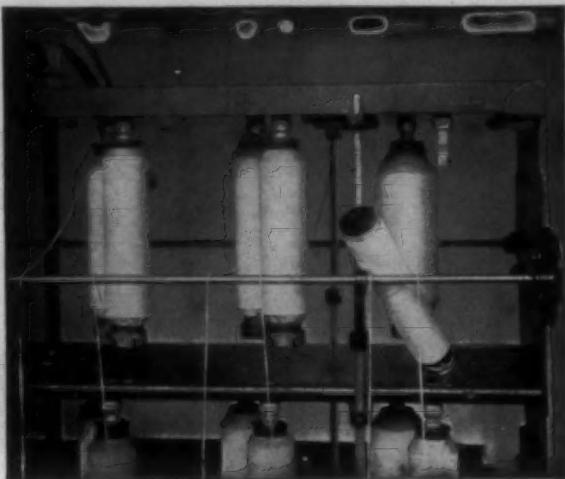
It is here that the business paper is of untold value to the manufacturer. For it reaches in advance the man behind the ground-glass door. In its pages can be said beforehand everything that must be said as a preliminary to effective personal selling; to get introductions and explanations out of the way; to create friendships and reputations; to clear the decks for two-fisted selling.

Because the business paper of today deals so authoritatively and constructively with the problems of its industry, profession or trade, it not only passes through the ground-glass door, but it is read, thoroughly and attentively, by the man who constitutes the manufacturer's most important single objective. His interest makes the business paper the key to saving crucial selling minutes.

This publication is a member of the Associated Business Papers, Inc. . . . a cooperative, non-profit organization of leading publications in the industrial, professional and merchandising fields, mutually pledged to uphold the highest editorial, journalistic and advertising standards.

+ + + + +

THE ASSOCIATED BUSINESS PAPERS, INC.
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**Eclipse Ball Bearing
Bobbin Holder
with
Long Draft System**

The Eclipse Ball Bearing Bobbin Holder used in connection with Long Draft system of Spinning has some very distinct and desirable advantages over wooden skewers.

Due to the Eclipse Ball Bearing Bobbin Holder's construction, the largest possible package of roving with a minimum of twist can be used without stretching the roving.

—WHY—

A package (large) of roving will be rotating on Ball Bearings, hence greatly reduced friction when being pulled from bobbin; also due to the construction of the Eclipse Ball Bearing Bobbin Holder, a package (large) of roving will automatically rotate without WABBLING—consequently, this means greatly reduced stretching of the roving.

We will be pleased to have our representative call and tell you all about the Eclipse Ball Bearing Bobbin Holder. Write us—



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